THE

British Medical Journal.

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

LONDON: SATURDAY, JULY 5TH, 1913.

PELLAGRA IN ENGLAND:

AN ACCOUNT OF FOUR RECENT CASES,

WITH A DESCRIPTION OF

THE HISTOLOGICAL CHANGES IN THE NERVOUS SYSTEM

AND AN ACCOUNT OF

THE HISTORY AND NATURAL HISTORY OF THE DISEASE.

[*With Special Plates.*]

PELLAGRA is a disease which has hitherto attracted little attention from practitioners in the United Kingdom. Probably it is a rare disease here, for were it common, as it is in certain districts of Italy where it is well known to the public as well as to the profession, its symptoms, whether it runs a swift or a slow course, are sufficiently marked to have ensured its general recognition long ere this.

The cutaneous and nervous systems are those in which the disease produces its most characteristic effects, and the series of papers here brought together are illustrated by Mr. Terzi's fine coloured drawing of the appearances in the case of a boy who died of acute pellagra in St. Thomas's Hospital under the care of Dr. C. R. Box. The histology of the changes in the nervous system observed by Dr. F. W. Mott in Dr. Box's case, and in a case from Egypt, are illustrated by coloured drawings and a series of photomicrographs.

The boy who died in St. Thomas's Hospital had never been out of England, and the disease in him ran a rapid course, lasting not more than about four months. It is now recognized beyond any reasonable doubt that an elder brother, who had been for a short time an inmate of St. Thomas's Hospital in 1910, also suffered from pellagra, but in a much more chronic form, for the history of his illness extended over six years. This elder boy was born in Kilkenny, but was taken when an infant to Leyton in Essex, where his younger brother was born; later on the family removed, first, to Catford, a southern suburb of London, and afterwards to Slough. In the case of the younger of these two boys the disease certainly began about a year ago, while he was living at Slough. Another brother, younger than either of these, has shown unmistakable signs of the disease in a mild form this spring, as is recorded by Dr. W. M. Sadler, of Slough, in Dr. Sambon's paper. This youngest boy was born at Catford, but has lived for the last three or four years at Slough. The cause, therefore, must have existed either at Catford, or Slough, or both.

Dr. Sambon believes it to be an insect-borne infection, conveyed probably by species of *Simulium*, a biting insect which passes its larval and pupal stages in running water. These stages and the perfect insect are shown in the drawings by Mr. Terzi, reproduced to illustrate the paper in this issue by Dr. Sambon, who has also supplied photographs of the Lymington river in which he has found the larvae and pupae of *Simuliidae*, and of one of its tributary streams in the New Forest, near which the perfect insect of two species of *Simulium*, together with species of Culicoides, were obtained. He was led to search for them by the occurrence of a case of pellagra recognized by Dr. Wallace Kay, of Lymington, whose clinical notes are embodied in Dr. Sambon's paper. Dr. Sambon also gives photographs of a stream in Transylvania, and of an irrigation canal, with a considerable current, in Italy, both inhabited by *Simulium*, for comparison with the stream and river in Hampshire.

In October, 1912, Dr. Sambon and Dr. Albert J. Chalmers contributed to this JOURNAL a critical summary of the scanty facts bearing on the endemic occurrence of the malady in these islands, and showed that it was endemic, to a limited extent at least, in some of the eastern districts of Scotland north of the Forth, and in the Shetland Islands. Two of the cases described by them had been recognized by Dr. Cranston Low of Edinburgh, one in 1909, and the other in 1911. It is probable that the lady whose case is described by Dr. Hammond from Shanklin, Isle of Wight, which he believes was an example of pellagra, contracted the disease that caused her death in Banffshire.

I.

FATAL PELLAGRA IN TWO ENGLISH BOYS.

BY

CHARLES R. BOX, M.D., F.R.C.P.Lond.,

PHYSICIAN TO OUT-PATIENTS, ST. THOMAS'S HOSPITAL, AND PHYSICIAN TO THE LONDON FEVER HOSPITAL.

On September 20th, 1912, a lad, E. T., aged 8, was admitted to St. Thomas's Hospital at his parents' request, because they feared that he was developing an obscure nervous disease similar to one which had affected his brother for several years, and finally caused his death at the age of 13.

History.

The patient, E. T., was born at Leyton, in Essex; later, resided for five years at Catford, in the suburbs of London, and finally removed with his family to Slough. His father and mother are English and not related to each other. His father is an army pensioner, and for the last eighteen months had suffered from aortic disease. The mother was quite healthy. Besides the patient they had had nine children. Five of these are living. One died of laryngeal diphtheria; one of an "acute toxaemia," after an illness of twenty-four hours; and one, to whom reference will be made later, from an illness which was no doubt pellagra.

Onset of Illness.

The patient's nervous symptoms were first noticed in June, 1912, three months before he came under observation, when he "fainted" whilst playing cricket. The "faints" recurred on several occasions. Twitching movements of the limbs and also a transitory convergent squint were noticed later.

On Bank Holiday, August 5th, there occurred a new sort of seizure. He had been stooping but suddenly stood erect, threw his head backwards and would have fallen if not caught. The body became rigid, but consciousness was not lost. Similar attacks occurred several times, always with a premonitory feeling of giddiness. He had never bitten his tongue or been observed to foam at the mouth. Recently he had become more and more unsteady in his movements.

Condition on Admission.

The boy appeared to be of average intelligence. His memory was good and he answered questions readily, but proved to be of an emotional disposition and easily moved to tears. His weight was 43 lb., or 9 lb. below the average for his age. His father attributed this to failure of appetite, saying that there was always plenty of food for the family.

Nervous System.

He was able to walk, but his gait showed a mixture of spasm and ataxy. He moved stiffly with his legs wide apart. The feet were raised high from the ground, steppage fashion, and there was a decided tendency to stagger, this being increased by closure of the eyes.

On the day of admission, whilst his gait was being investigated, he had one of the seizures which had been described by his parents. His head was stiffly retracted, he became rigid, and would have fallen backwards if not prevented. The attack lasted for a few moments only and consciousness was not lost. He cried quietly all the time.

A coarse nystagmus which accompanied all movements of the eyes was always present, and his speech was rather indistinct. These were the only abnormalities of the cranial motor mechanism. The pupils were active and equal; the optic papillae were quite healthy. Hearing, vision, taste, and smell proved to be normal.

Even when lying in bed the muscles of the arms and legs, particularly the latter, were in a condition of moderate rigidity, but they were not wasted, and there was no appreciable weakness. All voluntary movements appeared stiff. It was also evident, particularly when he was being photographed, that irregular, spasmodic movements of small range were apt to appear both in face and limbs, producing slight jerks which suggested the effect of a faradic shock.

There were no deformities of the feet or hands, and the spinal column was straight.

All the deep reflexes, both in arms and legs, were increased but no clonus could be elicited; the plantar reflex was always flexor in type; the cremasteric, abdominal, epigastric, and corneal reflexes were present.

Sensibility to all forms of stimuli was unimpaired. Subsequently Dr. Sandwith pointed out that there appeared to be some paravertebral tenderness which could be elicited by making firm pressure alongside the vertebral spines, on the right side from the second to the ninth dorsal, and on the left from the seventh cervical to the fourth dorsal.

The boy swallowed both solids and liquids with ease, but all the time he was under observation there was incontinence of both urine and faeces.

Alimentary System.

There was an insignificant rawness of the edges of the tongue and an inflammatory condition of the skin immediately surrounding the anus. The appetite was very capricious and the bowels were inclined to be loose, being opened two or three times a day; later there was a more decided tendency to diarrhoea.

The cardio-vascular and respiratory systems showed no signs of disease. The urine contained neither albumen nor sugar.

The Skin Lesions.

The patient presented a symmetrical erythematous dermatitis of striking distribution which afforded the clue to the nature of his disease. It is well shown in the coloured plate by which this paper is illustrated.

The inflammation involved the backs of the hands and wrists, the orbital regions and bridge of the nose, the nape of the neck and backs of the ears, and, to a slight degree, the points of the elbows.

On the face the dermatitis crossed the bridge of the nose, encircled both eyes and spread slightly on to the malar regions. The skin over this area was reddish in colour, resembling acute sunburn. It was somewhat thickened and showed a decided tendency to desquamate in small branny scales. The eyelids were slightly swollen and the conjunctivae were injected, presenting a lacrymose appearance. The skin of the nape of the neck was less red and rather more scaly, the lateral extensions of the dermatitis behind the ears and to the adjacent mastoid regions were quite symmetrical. The hair of the back of the scalp was dry, lustreless, and thin.

The eruption on the hands had a rougher appearance. When viewed from the dorsal aspects it terminated by a sharp margin across the arm, four fingerbreadths above the wrist. It covered the backs of both hands, extended on to the fingers in less marked form, and on the dorsum of each terminal phalanx assumed a brownish tint which was in marked contrast with the red colour of the rest of the affected area. The nails were healthy, but shallow ulcerations were found in several of the interdigital clefts. The palms of the hands escaped, but the dermatitis showed a tendency to extend from the backs of the wrists across the palmar aspects, especially from the radial side.

At the points of the elbows a brown scaliness of the skin was evident, and, although there was no red eruption on the feet or legs, the skin of each shin when lightly rubbed assumed a very powdery appearance.

When the lad was first admitted the dermatitis had a fairly bright red appearance, but the colour gradually faded to a brownish tint. At no time did he appear to experience either pain or irritation in the affected parts.

Cerebro-spinal Fluid: Blood.

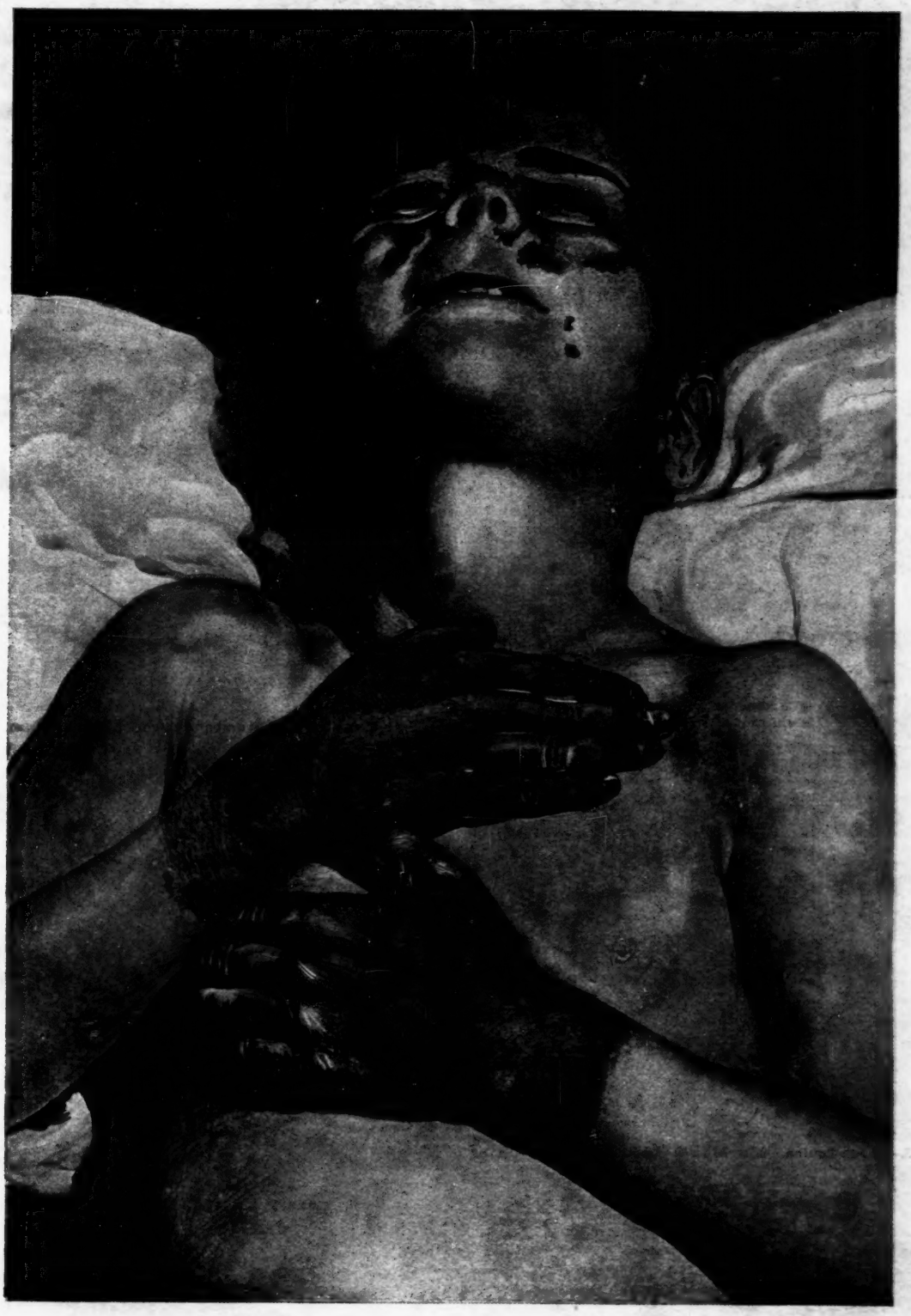
As the result of lumbar puncture, 15 c.cm. of clear cerebro-spinal fluid were withdrawn. The pressure was not increased. The fluid was examined in the clinical laboratory of the hospital, under the direction of Dr. L. S. Dudgeon. No cells were seen, no globulin was found, and the Wassermann reaction was negative.

At the same time the blood was also examined. This too gave a negative Wassermann reaction, and the count was as follows:

Erythrocytes, 3,475,000 per c.mm.
Haemoglobin, 65 per cent.
Colour index, 0.9.
Leucocytes, 5,140 per c.mm.

Differential count:

Polynuclears, 59.5 per cent.
Polynuclear eosins, 1.75 per cent.
Small lymphocytes, 28.5 per cent.
Large lymphocytes, 5 per cent.
Large hyaline cells, 5.25 per cent.



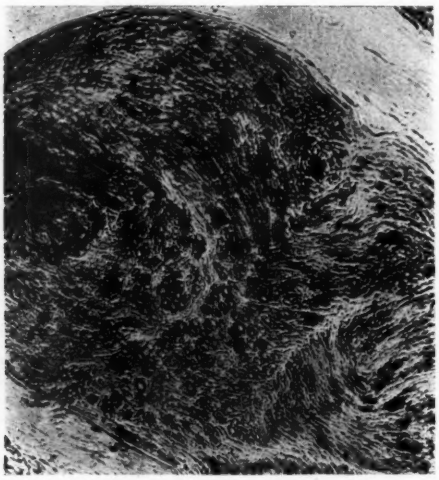


Fig. 1.—Transverse Section—Sciatic Nerve. *Marchi method. Mag. 120.*

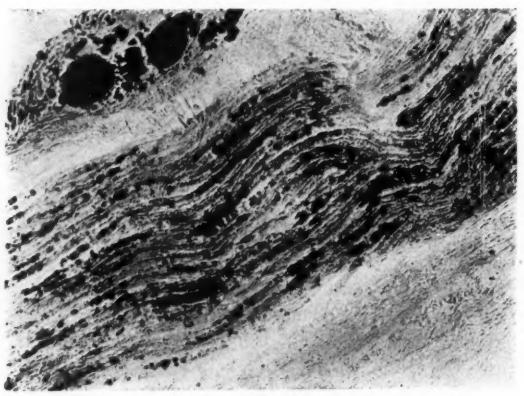


Fig. 2.—Longitudinal Section—Sciatic Nerve. *Marchi method. Mag. 160.*

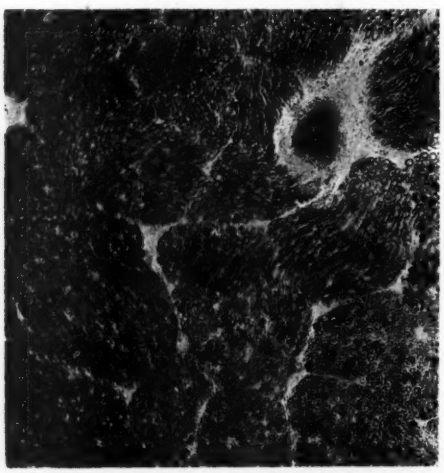


Fig. 3.—Cauda Equina. *Marchi method. Mag. 80.*

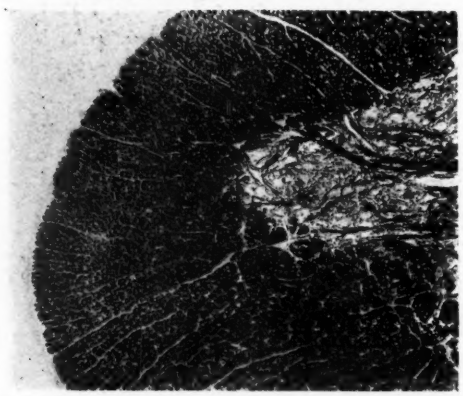


Fig. 4.—Spinal Cord—Cervical Region. Cerebellar Tract. *Weigert-Pal method.*

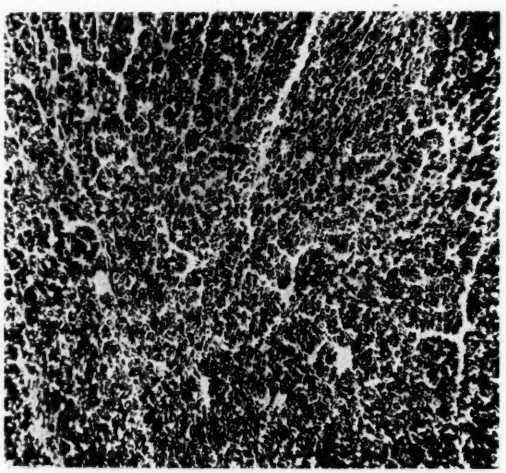


Fig. 5.—Spinal Cord—Cervical Region. Cerebellar Tract. *Weigert-Pal method. Mag. 80.*

Fig. 6.—Spinal Cord—Lumbar Region. *Weigert-Pal method.*

Fig. 7.—Spinal Cord—Cervical Region. *Weigert-Pal method.*

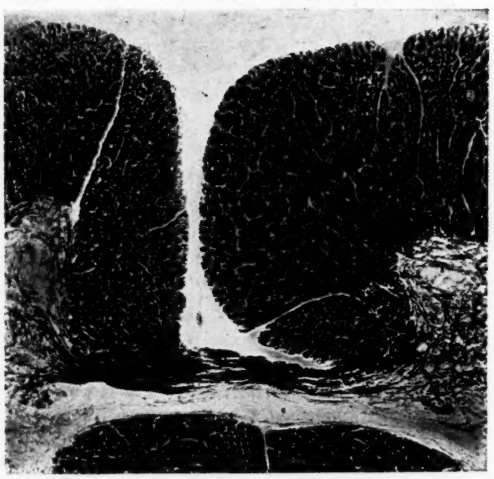


Fig. 8.—Direct Pyramidal Tracts—Cervical Region. *Weigert-Pal method.*

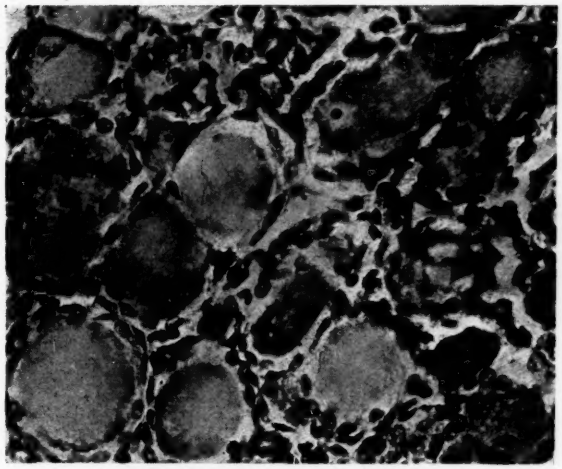


Fig. 9.—Posterior Spinal Ganglion.
Polychrome Blue method. Mag. 480.

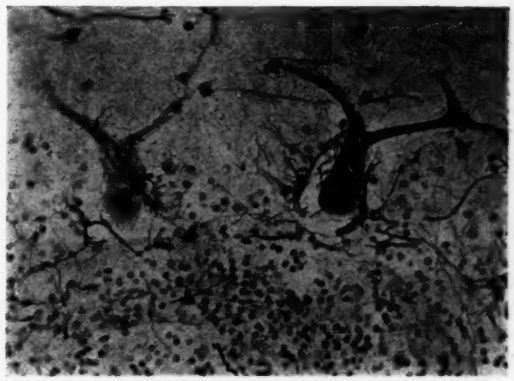


Fig. 11.—Purkinje Cells (Cerebellum).
Bielschowsky method. Mag. 300.

Fig. 10.—Betz Cell—Motor Cortex.
Cajal method. Mag. 700

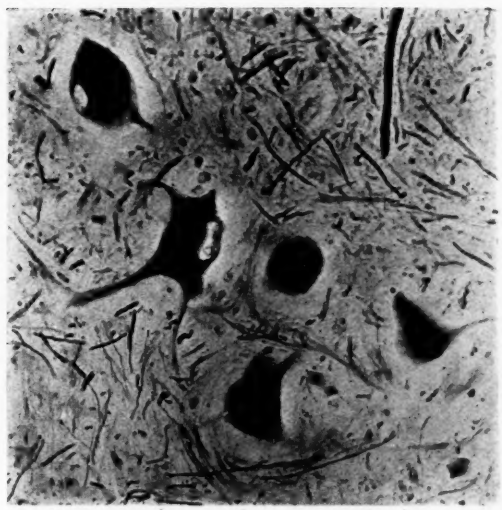
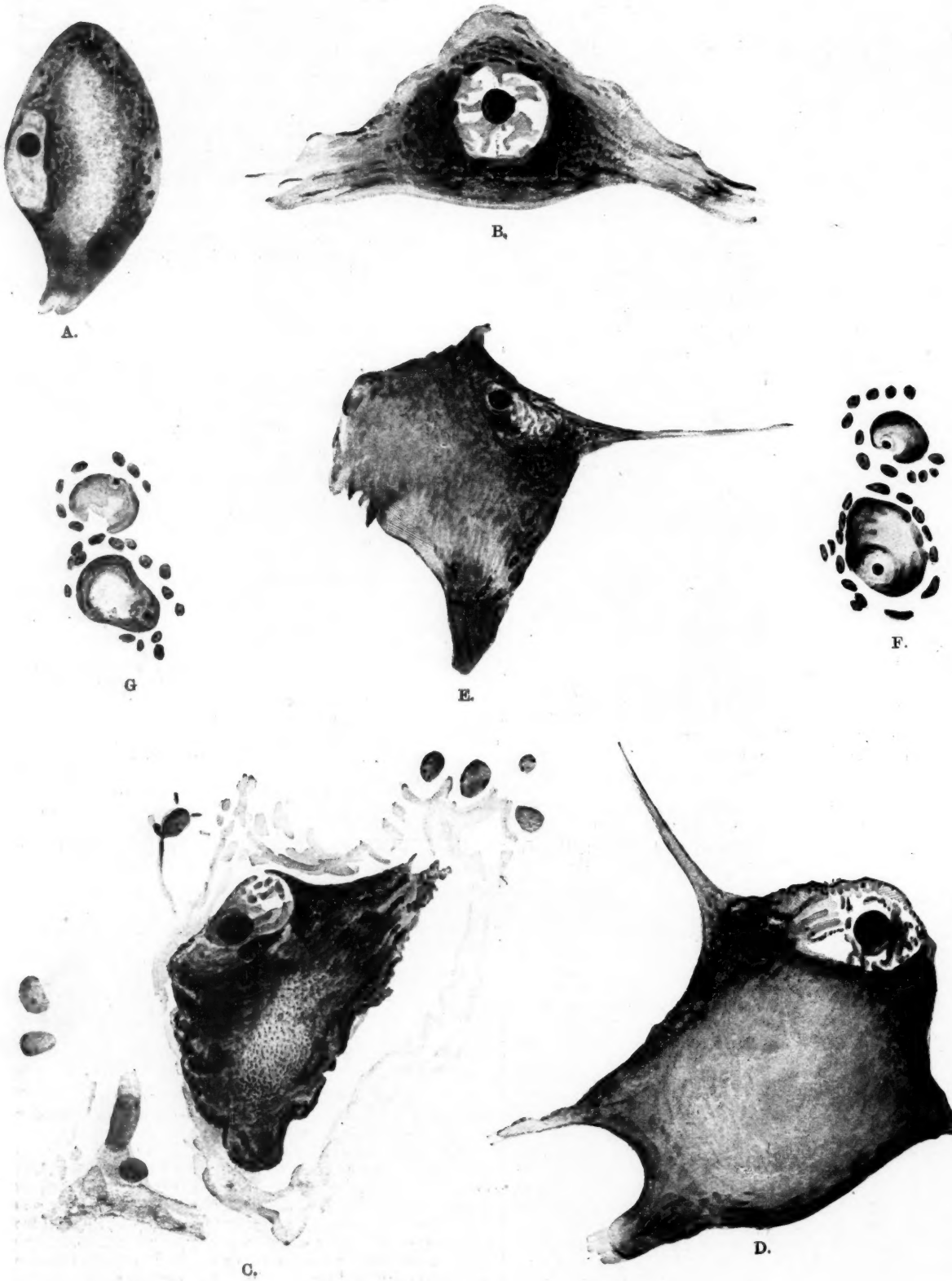


Fig. 12.—Anterior Horn Cells.
Bielschowsky method. Mag. 350.

SAMBON: PELLAGROUS DERMATITIS.

Pellagrous Dermatitis. Stage of desquamation. This patient had a large bleb on the back of the left hand. Italian case.

Pellagrous Dermatitis. Hands swollen and oedematous. Italian case.



A. Cell, Clarke's column. Cervical Region (Box).
B. Cell, Anterior Horn. Cervical Region (Box).
C. Betz cell, Motor Region (Box).
D. Betz cell, Motor Region (Pearson).
E. Cell, Anterior Horn (Pearson).
F. and G. Posterior Spinal Ganglion Cells.

DIAGNOSIS.

The eruption was recognized as pellagra, owing to its resemblance to the photographs in Drs. Lavinder and Babcock's translation of Dr. Marie's book on the disease. A copy of this work had been given to me by Dr. J. J. Watson of Columbia, S.C., who visited England in 1910.

PROGRESS.

On some days the patient was decidedly more tremulous than on others. Shock-like twitches of the muscles of the face, arms, and legs continued to appear. There were no more cerebral seizures, but a tendency to adductor spasm was superadded to the first observed extensor rigidity of the legs. Spasm of the calf muscles also caused a tendency to walk on the toes. The knee-jerks remained exaggerated, but no extensor response was ever obtained from the soles, and no true clonus appeared.

The patient vomited on one or two occasions, and the appetite was variable, but, notwithstanding this, he put on weight rapidly during the first week, only to lose it again later as he became progressively weaker. The state of the bowels, tending to increasing looseness, has already been mentioned.

During the latter part of his life he developed slight delusions, believing, among other things, that his father was under his bed.

Until the last three days his temperature was practically normal, only rising slightly on one or two occasions.

About a fortnight before death an acute suppurative balanitis made its appearance, and ultimately it became necessary to slit up the prepuce. This was effected under nitrous oxide anaesthesia three days before he died. The patient was very stuporous afterwards, but did to a certain extent regain consciousness. Whilst in this condition the knee-jerks remained exaggerated, and a pseudo-clonus was obtained at the ankle, but no extensor response from the soles. The jerky movements of the limbs continued to occur at intervals. The pulse now became accelerated, and began to fail, whilst respiration was very irregular. The day after the anaesthetic the temperature rose to 101.6°, but soon fell to normal. The next day it barely touched 99.5°. On the third day it ran up to 100.4°, and the pulse rose to 160. After a short stage of irritability the patient died on October 18th, 1912.

NECROPSY.

The *post-mortem* examination was carried out two and a half hours after death.

The body was not greatly emaciated. Fat was still present in the subcutaneous tissues and in the omenta. The eruption could be recognized on the hands and wrists, the elbows, the neck and the face as a brownish scaly thickening.

The mouth, fauces, and tongue showed no macroscopic lesions. The lower third of the interior of the gullet was bile-stained, but the mucous membrane appeared normal. The gastric mucosa was coated with adherent mucus, but not injected, ulcerated, or wasted. The only striking point in connexion with the small intestine was the quantity of mucus present in it. The edges of the ileo-caecal valve were purple and superficially ulcerated; the ulceration extended on to the adjacent wall of the caecum. In the colon itself, near the splenic flexure, was a circular cicatrix, about half an inch broad, and slightly ulcerated at its margin. The appendix was normal in its proximal two-thirds. A tight stricture had caused the distal third to become bulbous. It contained inspissated pus. The mesenteric glands were enlarged; one or two of them contained caseous material which was calcifying. The largest glands were not much bigger than peas. There was no peritonitis, either old or recent. The liver was fatty-nutmeg in appearance and not enlarged. The gall bladder contained dark bile. The weight of the liver was 24 oz. The spleen weighed 2¼ oz. It was normal in colour, and the cut surface presented nothing remarkable. The adrenals and pancreas appeared quite healthy. The kidneys weighed 6¼ oz. They were a little swollen, and on section had a pale oedematous appearance. Their capsules could be stripped readily. The bladder, ureters, and rectum were healthy. The prepuce had been slit dorsally, and was somewhat thickened from recent inflammation.

The pleurae and pericardium were free from inflammation or adhesions. The right and left lungs weighed 4 and 5 oz. respectively. They were slightly over-inflated and everywhere crepitant. No tubercles were found in lungs or bronchial glands. The heart weighed 2¼ oz. It was free from valve lesions and its muscle dark and firm. The marrow in the femur and ribs was bright red. The dura mater was healthy, as also were the great venous sinuses of the brain. The pia arachnoid was not oedematous and showed no opacities. The spinal meninges also were healthy. The ventricles of the brain were not distended, and it was difficult to be sure of any sclerosis of the cord before hardening.

A culture made from the blood immediately after death showed, according to Dr. Dudgeon's report, the presence of *Streptococcus pyogenes*.

HISTORY OF THE BROTHER'S FATAL ILLNESS.

R. T., aged 11 years, was admitted to St. Thomas's Hospital on September 27th, 1910, and remained under observation for a fortnight only. He was the sixth child of the family, and, unlike his brother, was born in Kilkenny, but only resided there for five months, the family then leaving that part and removing to Essex.

For several years, possibly six, he had been weak on his legs, and was dull and backward with his studies. He suffered with incontinence of urine. Latterly he had become worse in every way, and for a few weeks his speech had been very indistinct.

In hospital he mostly lay curled up in bed. His mental condition was dull. He was very slow to answer questions and easily moved to laughter. His voice was low-pitched, and he said he could not speak loudly. There was marked weakness of both arms and legs, but no picked-out atrophy of muscles. There was also a tendency to spasticity, particularly in the lower limbs. When he attempted voluntary movements with the hands a coarse intention tremor was noticeable. When he tried to walk his movements were very unsteady; he showed a marked tendency to sway laterally, and almost over-balanced when he turned round. All the arm reflexes were decidedly brisk. The knee-jerks were exaggerated, especially on the right side. No clonus was obtained in the lower limbs, but the plantar reflexes were both extensor in type and there was a double claw-foot.

Movements of the eyes were not limited in any direction, but lateral movements were accompanied by a coarse nystagmus. The optic papillae, fundi, and media were quite normal, but a high degree of hypermetropia was present in both eyes. The pupil reactions were sluggish but complete.

Deglutition was normal. With regard to micturition, sometimes the urine was retained, sometimes there was incontinence.

No defect in cutaneous sensibility could be discovered.

The chest was well formed and its movements good. No pulmonary disease was found. The heart's area was not increased. There were no murmurs. The pulse was regular and varied from 72 to 96.

The temperature was normal throughout.

The only anomaly in the digestive system lay in the action of the bowels. At first these were constipated and enemata necessary. Later there was a somewhat troublesome diarrhoea which needed treatment.

The blood was examined for a Wassermann reaction, with negative result, and the cerebro-spinal fluid showed no globulin and no Wassermann reaction. Not enough for a cell count was obtained.

But little is known about the eruption. It was not specifically described in the notes, or indeed specially noticed in hospital, but in the account of his state on admission he is described as being of a high colour and somewhat tuberculous facies, whilst later a compound tar ointment was prescribed, presumably for the face. We have since learnt from his mother that he did have a rash which appeared three or four years before he came under observation at the hospital; that this rash appeared in the summer only on successive years; and that it was not so pronounced as the rash in his brother's case. It involved the face, neck, and the hands, but did not cause any septic spots between the fingers.

The boy was discharged in fourteen days in much the same condition as when admitted, the disease being diagnosed as an anomalous form of combined degeneration of the cord in some respects resembling Friedreich's ataxy. No suspicion of pellagra arose at the time.

We heard later that he died in January, 1911, but could not ascertain from the parents the immediate cause of his decease. No *post-mortem* examination was made. Both boys were alleged to be fond of popcorn or parched maize, but only had the means to buy it occasionally.

II.

THE HISTOLOGICAL CHANGES IN THE NERVOUS SYSTEM OF DR. BOX'S CASE OF PELLAGRA,

COMPARED WITH CHANGES FOUND IN A CASE OF PELLAGRA DYING IN THE ABASSIEH ASYLUM, CAIRO.

By F. W. MOTT, M.D., F.R.S.,

PATHOLOGIST TO THE LONDON COUNTY ASYLUMS; PHYSICIAN TO CHARING CROSS HOSPITAL.

Method Employed for Preparation of Specimens.

The brain, spinal cord, and a few of the posterior spinal ganglia and a small piece of the sciatic nerve were sent for examination. Portions of tissue obtained from various parts of the central nervous system were separately hardened and fixed in Müller's fluid for subsequent examination by the Marchi method for recent degeneration, and by the Weigert and Weigert-Pal methods for fibre system degenerations. Other portions were hardened for a few days in 5 per cent. formalin, and transferred to alcohol in successive strengths for examination by Nissl methods; some portions of the formol fixed tissues were subjected to the Bielschowsky method for demonstration of fibril changes in the cells.

The Müller hardened tissues were treated by the celloidin method before sections were cut by the Jung microtome.

The formol hardened specimens were embedded in paraffin and cut in the Cambridge rocking microtome. The sections were 10 μ in thickness. (The number and letters refer to the figures on the special plate.)

Changes in the Fibres.

The changes observed in the fibres by the Marchi method were as follows:

Sciatic Nerve.—Recent scattered degenerated fibres were found in all the longitudinal and transverse sections of the sciatic nerve, not limited to any bundle of fibres, but general, though somewhat unequal in numbers in all. Fig. 1 shows one of these bundles in transverse section; the black dots are the degenerated fibres. Fig. 2 shows a bundle in longitudinal section; owing to the piece of nerve not having been pinned out on cork when placed in the hardening fluid before I received it, the fibres are curled, consequently the sections have cut many of the fibres obliquely.

Cauda Equina.—The roots of the cauda equina show similarly scattered degenerated fibres (Fig. 3).

Spinal Cord.—There is general diffuse and scattered degenerated fibres throughout the white matter, more marked in the postero-lateral and posterior median columns than elsewhere.

Changes in the Fibre Systems.

The changes observed in the fibre systems by the Weigert and Weigert-Pal methods were as follows: There is a slight general diffuse sclerosis throughout the white matter of the cord in all regions, but in certain regions there is a perceptible naked-eye combined sclerosis affecting the direct cerebellar and Gowers's tracts, Goll's column, and the crossed pyramidal tracts. The ascending degenerations are very observable, as Fig. 4 shows in the cervical region. This is to be expected, because in this region all the fibres belonging to these tracts have taken up a definite position; consequently disappearance of the fibres and replacement by neuroglia tissue is more obvious to the naked eye, but microscopic examination in any part of the cord shows the outfall of fibres in these systems and their replacement by neuroglia.

The descending degeneration in the crossed pyramidal tracts is obvious to the naked eye, but, aided by a hand lens, is very evident in the lower lumbar and sacral regions (Fig. 6). Examination microscopically shows an outfall of fibres and replacement by glia tissue of the crossed pyramidal systems in any part of the course. The direct tract is much larger on one side than the other, and in the cervical region a well-marked outfall of fibres with sclerosis is observable with a low magnification. This is more obvious on the side where the direct tract is the larger. Some scattered sclerosis can be observed in the pyramids of the medulla.

Changes in the Central Nervous System.

As to the changes observed in sections of the cerebrum, cerebellum, pons, medulla, spinal cord, and spinal ganglia cut by the paraffin method, and stained by Nissl, Polychrome, Giemsa, logwood and eosin, and Van Gieson methods, it may at once be said that in none of the sections examined was there any evidence of meningeal or perivascular infiltration with lymphocytes or plasma cells, or with polynuclear leucocytes. Consequently the terminal streptococcal infection had not invaded the cerebro-spinal fluid, and could not, therefore, account for the changes in the neurones by a local inflammatory condition. The absence of chronic meningo-encephalitis and meningo-myelitis, so characteristic of protozoal diseases, contra-indicates the protozoal theory of the origin of pellagra, yet it does not disprove it, for in malaria the vessels may be filled with the organisms and yet no inflammatory perivascular and meningeal reaction is seen; moreover, although all the changes are like those produced by a chronic toxaemia, yet the cause of that toxaemia has not been satisfactorily determined. Whether the two ulcers found in the intestines had any relation to a chronic toxic infection it is difficult to say. The combined sclerosis is not unlike that found in a pernicious anaemia which we know may be due to a streptococcal toxaemia.

By any one of the methods mentioned the following changes may be observed:

All the posterior spinal ganglion cells show in varying degrees a marked chromatolysis, swelling of the cell, disappearance of the Nissl granules, except at the periphery, and frequently eccentric position of the nucleus (Figs. G and F). All the anterior horn cells and their homologues in the medulla and pons show varying degrees of perinuclear chromatolysis; in some instances the cells are so markedly swollen, and the nucleus is so eccentric, that it appears as if the cell were dead (Fig. D). There was a marked chromatolysis of the cells of Clarke's column.

The Betz cells of the cortex showed similar changes (Figs. C and D), but not so marked; likewise the cells of Purkinje; the pyramidal cells of the cerebral cortex did not appear to be markedly affected.

Wherever the nervous system was examined the cells which normally have a Nissl pattern seemed to show a change in the nature of a disappearance of the granules, partial or complete, without any evident changes in the vessels of an inflammatory nature to account for the same. Seeing that there is a combined sclerosis of the cord, obviously these changes could not be of quite recent origin, and therefore capable of being explained by the terminal generalization in the blood of streptococci from the balanitis. Moreover, my experience tells me that the nerve-cell changes rather indicate a chronic toxaemia.

Changes in the Cells.

The changes observed in the cells by Bielschowsky fibril method were that the anterior horn cells (Fig. 12) and the cells of Purkinje (Fig. 11), also the Betz cells, but to a less degree, showed in varying degrees, in different parts of a section and in various regions examined, fibril changes similar in character. Some cells show hardly any fibrils, others a few, others appear quite normal (Fig. 10), as if they had been affected in different degrees of intensity by the poison. This is not an unusual condition of things in chronic toxic conditions affecting the nervous system.

Comparison of these changes in the cells of Dr. Box's case with those of a pellagrous patient who died at the Abassieh Asylum—for the notes and material of which I am indebted to Dr. R. W. J. Pearson—show that there is no essential difference. There is a combined sclerosis

of the spinal cord more marked in the Egyptian case; there are the same changes in all the ganglion cells of the spinal cord and brain, and there are no signs of acute or chronic vascular or meningeal inflammatory changes.

The following are Dr. Pearson's notes of his case:

REPORT OF AN EGYPTIAN CASE.

A native woman, belonged to the Mudirieh of Menoufieh. Nationality, Egyptian; aged 30 years; religion, Moslem. Not addicted to alcohol or hasheesh. First attack; admitted September 18th, 1911; died November 16th, 1911. Bodily state on admission: height, 150 cm.; weight, 6 st.; nutrition, bad; temperature, 37.1° C.; facial expression, good; eyes—pupils round, central and equal; both eyes react to light and accommodation; pulse—weak, small and quick, 120 per minute; heart—pulmonary sound accentuated, otherwise normal; tongue—clean and steady; lungs—slight rhonchi in right lung near apex; respirations—17 per minute; bowels—has diarrhoea. Extremities—pellagrous rash over dorsum of hands and back of forearms, over dorsum of feet, over the knees, and the backs of the elbows. Nervous system—reflexes; knee-jerks exaggerated; no ankle clonus nor Babinski; speech—she speaks in syllables, due to weakness; gait—affected, due to weakness; sleep—good. Mental—does not know the day nor date, she speaks fairly sensibly; says she came to Cairo for her illness; does not see visions nor hear voices.

September 19th, 1911. The patient has a dull melancholic expression. She is very depressed. She is disconnected in time and space; does not know where she is, or what day or date it is. Her mental reaction is very slow, and she seems to have great difficulty in expressing herself. She is very confused and incoherent. Her physique is below the average and she is much emaciated. She has a pellagrous rash on the face, round the eyes, and across the nose, also on the hands and forearms, feet and legs, knees and elbows. She has a marked tenderness on pressure over the posterior nerve roots. Her tongue is denuded of epithelium, and her parotids are markedly thickened. Her lungs are sound. Her heart has a very feeble action and there are haemic murmurs at the base. Her chest wall is sound. Her eyes react to light and on accommodation. Her knee-jerks are increased; no ankle clonus nor Babinski's sign. She denies hasheesh and alcohol, and there is no history of them. She says she is very poor and has eaten a lot of dhurra shawi. There are no signs of syphilis. She has pellagrous diarrhoea, and is in a very weak condition. She is not suicidal.

October 11th, 1911. The general condition of the patient has slightly improved. Mentally she is not so confused now, and her mental reaction is quicker than on admission. The pellagrous (black) rash over her nose and eyelids is beginning to peel off, also the rash on her hands and feet. She has a peculiar gait, very like the gait of paralysis agitans, without the tremors of that disease. Her head and shoulders stoop forward in a "hunchback" fashion. Her knees are flexed and she walks flat-footed. Her muscular system is wasted and weak, and the patient supports herself with the skeletal system and ligaments rather than the muscles. The diarrhoea is getting somewhat better. Her tongue is denuded of epithelium. The enlargement of the parotids persists. Her knee-jerks are still exaggerated, but there is no ankle clonus nor Babinski's sign. She still has marked tenderness over the posterior nerve roots. Her eyes react to light and accommodation.

October 26th, 1911. The pellagrous rash is reappearing on the elbows, but is completely peeled off from the face and hands, leaving a whitish inelastic skin. The patient is getting more shaky and unable to sit up. She has stomatitis; she says she is well and strong.

November 2nd, 1911. The patient is helpless and depressed. She is chattering and incoherent; in a condition of typhoid pellagra.

November 16th, 1911. The patient died at 6 a.m. after prolonged exhaustion.

Extract from Post-mortem Notes.—The *post-mortem* examination was made on November 11th, 1911. Condition of body and external appearances: Very emaciated, with black pellagrous rash on feet and hands, elbows, etc.; parotids markedly enlarged and tongue denuded of epithelium; markedly anaemic. Calvaria—450 grams, thickened and dense. The brain was kept for examination later and was not cut at the *post-mortem* examination. The dura mater was a good deal thickened and was adherent to the calvaria, so much so that the brain had to be removed with the calvaria still *in situ*, and afterwards carefully separated from it. There was a distinct excess of cerebro-spinal fluid. The spinal fluid below the medulla (where it is cut in removing the brain) had a lot of blackish-brown pigment in the membranes, which was granular to the feel. Heart—160 grams, pale, anaemic, flabby, and somewhat atrophied; no organic lesions of the valves; no atheroma of the aorta or coronary arteries. Right lung—300 grams; some pearly old adhesions all along anterior border. At the base of the right lung a small cavity, necrotic in origin, was found; no signs of tubercle; congested at base. Left lung—some pearly old adhesions along anterior border and surface of lung; no signs of tubercle; congested at base. Liver—1,040 grams; anaemic, otherwise normal; gall bladder contained some blackish liquid bile; no gall stones. One bilharzia worm was found in the specimen of portal blood taken. Right kidney—100 grams; somewhat hard and fibrous; capsule strips easily; pelvis congested. Left kidney—120 grams; capsule strips easily; somewhat fibrous; pelvis congested. Spleen—170 grams; very congested; soft and friable. Intestines—the small intestine in normal condition; the large intestine in condition of chronic colitis with denudation of epithelium and patches of marked congestion with ecchymoses and arborization of blood vessels. The stomach dilated and thinned with denudation of epithelium. The intestines as a whole showed the thinning and transparency typical of pellagra.

The bladder had granular sandy patches of bilharziosis. The spinal cord was removed and preserved for examination.

This case came from a district where the maize which the people had eaten was very bad. My assistant, Mr. Mann, has made a preliminary examination of this maize, and he finds that compared with sound maize there was a considerable diminution of phosphorized lipoids. It is possible that any impoverishment of diet, by which certain essential substances in the blood fall below the physiological minimum, may play an important part in the degenerative process of the nervous system. Still, here we find these two cases of Dr. Box, in which diseased maize certainly could not have played any part in the production of degeneration of the nervous system, similar in histological details to those of a case which had come from a pellagrous district in Egypt, where unsound maize had been a staple article of diet. It seems that we must look for some other etiological factor as the essential cause of this disease, and we can but admire Dr. Sambon's enthusiasm and energy in the endeavour to show the protozoal origin of pellagra by its epidemiology.

I wish to express my indebtedness to my assistant, Mr. Charles Geary, for the photomicrographs and preparations, and to Major Fink for drawing the coloured plate.

NOTE.—The whole of the photomicrographs—Figs. 1 to 12—are of microscopical preparations from Dr. Box's case.

III.

THE NATURAL HISTORY OF PELLAGRA.

WITH AN ACCOUNT OF TWO NEW CASES IN ENGLAND.

BY LOUIS W. SAMBON, M.D., F.Z.S.,

LECTURER TO THE LONDON SCHOOL OF TROPICAL MEDICINE, AND PARASITOLOGIST TO THE WELLCOME RESEARCH LABORATORIES.

IN an article published jointly with Dr. A. J. Chalmers in the JOURNAL of October 26th, 1912, I endeavoured to show that pellagra is not foreign to the British Isles as hitherto believed, and that its presence in Scotland can be traced back with certainty to the year 1863. At that date a typical indigenous case from Arbroath, Forfar, was recognized by Dr. James C. Howden, then Superintendent of the Montrose Royal Asylum, and published three years later in the April number of the *Journal of Mental Science*. Prior to this we find two probable cases mentioned by Dr. E. Billod in his *Traité de la Pellagre* (Paris, 1865, p. 101). Both occurred in the same family, inhabiting some remote village in the "extreme north-east of Scotland," and were notified to Dr. Billod in December, 1860, by Dr. W. A. F. Browne, at that time Inspector-General of the Scottish Lunatic Asylums.

From 1866 we have to come down to 1906 for the next record of an indigenous case, and that a very doubtful one from Cheshire, published by Dr. Andrew Cassels Brown in the *Practitioner* of May, 1906.

In the *Edinburgh Medical Journal* of September, 1909, Drs. R. Dods Brown and R. Cranston Low described an indubitable case in a young woman from Shetland, who was admitted to the Royal Edinburgh Asylum on July 13th, 1908.

In 1912 I journeyed with Dr. Chalmers through the eastern districts of Scotland to visit places where we knew that pellagra cases had occurred, and we were able to establish that the disease is certainly endemic in Fifeshire, Forfarshire, Aberdeenshire, and the Shetland Islands. We reported several new cases, and amongst them, thanks to Dr. R. Cranston Low's courtesy, we were able to describe the unpublished case of a woman from Colingsburgh, Fifeshire, who had died of typical pellagra in Edinburgh in 1911.

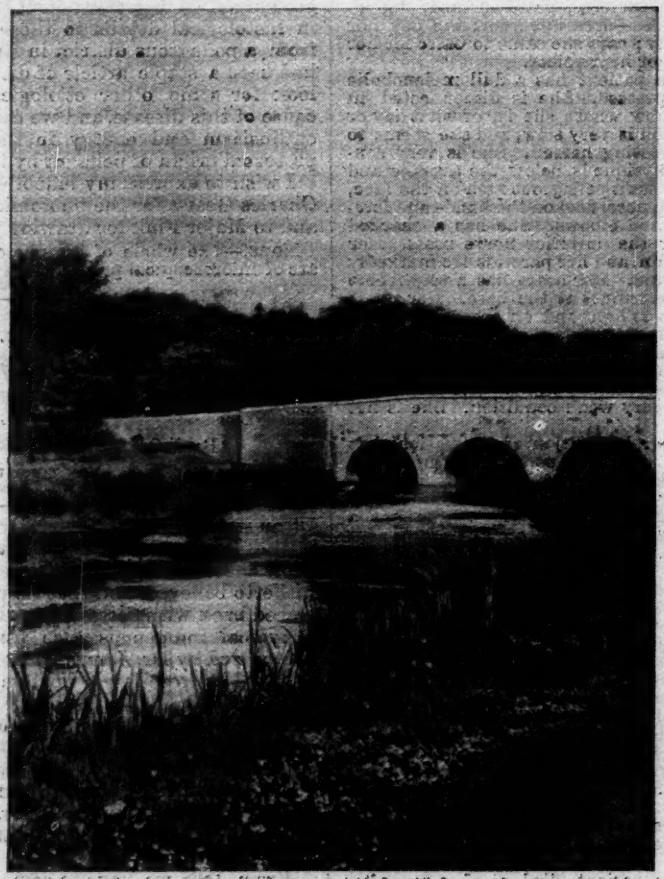
On my return to London I found a letter from Dr. F. M. Sandwith informing me of the presence of a possible case at St. Thomas's Hospital under the care of Dr. Box. I went to the hospital with Dr. Chalmers, and we found the case to be absolutely typical. (The coloured plate shows

the appearances.) It was the first indubitable case recognized in England, and the patient, a boy 8 years of age, had never left the neighbourhood of London (Leyton, Catford, Slough). Dr. Box told us that the brother of this pellagrin had died, presumably of the same affection, the year previous, but that the disease had not been recognized at the time. Dr. Box's case was so characteristic and interesting that, with his kind permission, I got Drs. Cantlie, MacLeod, Pernet, and Abraham to see it. Dr. MacLeod had already examined several pellagrins from the north of Italy in Rome, at the time of the International Dermatological Congress in April, 1912, and had visited with me Zagarolo, a district at the foot of the Prenestini mountains, where the disease is endemic. Two more British cases have recently come to my knowledge—one from Beaulieu in the New Forest, Hants, the other from Slough, Bucks. Of the first case I was informed in November, 1912, by Dr. Wallace Kay of Lymington. I went to Lymington with Dr. Chalmers, and we were shown a typical pellagrin recovering from a severe recurrence. The characteristic dermatitis having reappeared in April this year, I returned to Lymington with Dr. McClure and Mr. Amoruso to study both the patient and the locality.

The following is a note by Dr. Kay:

> G. L. was born in Beaulieu of English parents, and has never been out of the district. He is a strong, well-built man, 36 years of age. His occupation is that of kitchen gardener, and his economic conditions are good. He states that he has never used maize as an article of food, but may have crunched a grain or two occasionally, whilst giving it to fowls. Close to where he lives there are streams harbouring *Simuliidae*, and he says that at times in the evening he has been bitten by small black flies while gardening. When first I saw him last year, about the end of February, he presented a symmetrical erythematous dermatitis involving the face, the neck, the dorsum of the hands and feet, and the scrotum. He complained of weakness, of headache, and of dizziness, especially when rising from the stooping posture. His eyes had a startled look, his hands showed tremor, and he was very depressed at times. Pressure along the spine provoked pain, and the knee-jerks were somewhat exaggerated and unequal. There was diarrhoea.
>
> The present illness appears to have begun in 1911, towards the end of the summer, with a sunburn-like redness which affected the back of the hands only, lasted about one month and then went away. At the time the patient did not seek advice.
>
> Early in February, 1912, the rash reappeared, first on the back of the hands, then round the neck and on the face, later on the dorsum of the feet, and lastly on the scrotum. It lasted until the middle of December, the epidermis desquamating like ordinary scurf. The hands and lips were swollen and the patient complained of a feeling of burning in the erythematous areas which was increased by exposure to sunlight. Indeed, in order to protect the affected parts he wore a muffler round his neck and covered his hands with linen gloves.
>
> The patient during winter apparently recovered, but this year, towards the end of April, again the eruption appeared on hands and face. Up to the time of writing it has remained limited to these parts, but he has not exposed himself to the sun, so it is hardly fair to judge.
>
> When one considers all the foregoing points, the appearance of the first eruption at the end of summer, its second appearance at the beginning of spring and its third recurrence also in spring, the remission of symptoms and improvement during winter, the bilaterally symmetrical erythema with subsequent desquamation, the vertigo, the tremor, the depression of spirits, the bodily weakness, the burning of hands and feet, the diarrhoea, etc., one cannot help but come to the conclusion that the case is one of true pellagra.

So far I have not seen another case, but I have really had no time to hunt for them.



Lymington River, Boldre Bridge.

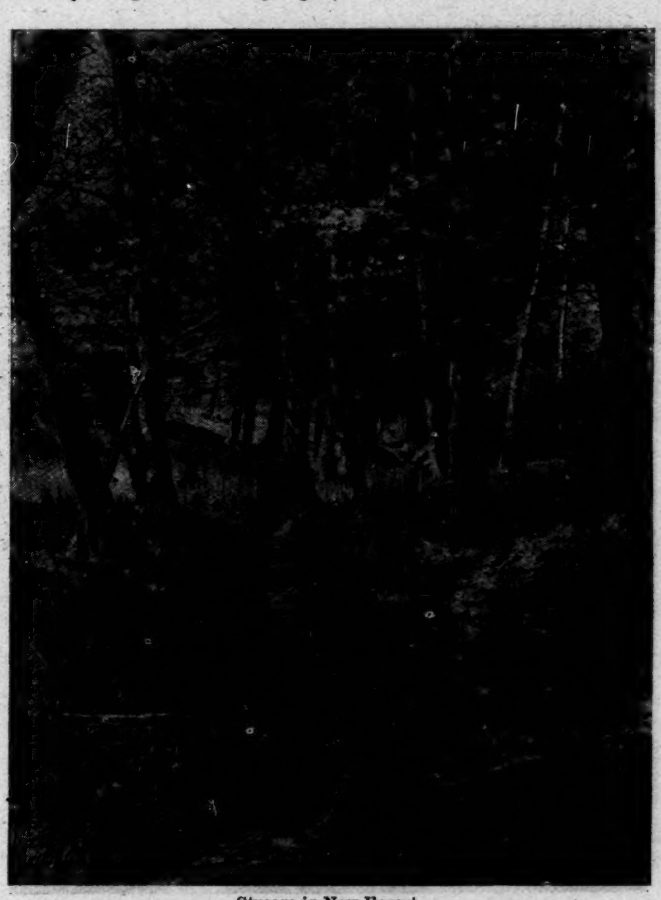
Together with Mr. Amoruso, who assisted me in my earlier Italian investigations, I followed the Lymington river between Lymington Bridge and Brockenhurst and examined many of its tributary streams. In all of them we found larvae and pupae of Simuliidae. In some there were two and perhaps three different species. The larvae and pupae were attached either to stones or to water weeds and driftwood. A favourite site seemed to be that part of the Lymington river between Boldre Bridge (see photograph) and the foot bridge west of Rodlease Rough, which was full of submerged aquatic plants and great patches of water crowfoot (*Ranunculus aquatilis*) in the full glory of its snow-white bloom. In one small stream at the bend of the Boldre Road between Boldre Grange and Sandy Down we found numerous Simulium larvae attached to a piece of submerged newspaper. Nowhere, however, were we able to find any Simuliidae on the wing except in the forest along the stream running through Dawkins Bottom, east of Setley, which is shown in another photograph. Here we were able to capture several kinds of blood-sucking flies, amongst which were two species of Simulium and two species of Culicoides. Mr. E. E. Austen, Dipterologist to the British Museum, kindly determined these flies, and found the Simuliidae to be *Simulium lineatum*, Mg. (*apud* Roubaud) and *Simulium reptans*, L. (var. *fasciatum*, Roubaud); and the Ceratopogoninae to be *Culicoides pulicaris*, L., and *Culicoides varius* (Winn.), both of which are common and widely distributed in the British Isles. Drawings by Mr. Terzi of *S. reptans* and of larva and pupa are reproduced to illustrate this article.

The second case I have to mention is that of F. T., a boy of 7, brother of Dr. Box's patient, and the third person to be attacked by pellagra in the one family. Dr. W. M. Sadler of Slough, who attends the family, very kindly supplied the following information:

Attention was first drawn to the boy in February of this year by his parents, who noticed a reddish, somewhat scaly appearance of the cheeks which was not unlike that noticed on the brother who died of pellagra at St. Thomas's Hospital. He had a similar eruption on the dorsum of the hands extending to the wrists. The boy was quiet, but not dull. The knee-jerks were a little brisk, but there was no spasticity or ataxy of upper or lower limbs, nor diarrhoea. The rash during the four months he has been under observation has gradually faded and no other symptoms have appeared. On the cheeks and hands now there is a little roughness. The parents stated that he has not eaten maize at all.

I had the opportunity of examining this child in London at the end of May, when the eruption was disappearing, but both the face and hands still presented unmistakable evidence of the characteristic dermatitis. The face lesions were complicated by a secondary streptococcal impetigo which I had noticed also in the brother that died at St. Thomas's Hospital.

In this patient the eruption was slight and was not accompanied by any other appreciable symptoms. The case was exactly similar to many I have seen amongst the children inhabiting pellagrous districts abroad. It would have been overlooked, like the majority of cases in this stage, if not specially looked for. Both the brothers who died of the disease had presented similar slight manifestations prior to the more severe recurrences which put an end to their lives. Believing such mild pellagrous conditions to be of the greatest epidemiological importance, I showed the little pellagrin to Drs. Cantlie, MacLeod, Newham, McClure, and G. C. Low. Together with Dr. Low I examined the boy's blood, and we noticed, as usual, a relative increase of the lymphocytes (small lymphocytes), which appears to be a characteristic feature of pellagrin blood.



Stream in New Forest.

It would be of the greatest interest and importance to know precisely where and how the three T. children acquired pellagra.

As in the other British cases, maize is out of the question. Popcorn (parched maize) was suggested as a possible factor in the case that died in St. Thomas's Hospital, but the parents have assured me that, so far as they know, their children never eat maize in any form. Neither can poverty play any part, because the T.'s are in good economic conditions, and the food of the children has been always plentiful and good. The family came from Kilkenny to Leyton in 1899. At Leyton they resided for about five years, then they moved to Catford for another period of five years, finally settling in Slough. Of the three pellagrin children, the first was born in Kilkenny a few months before coming to England, the second was born in 1904 at Leyton, the third in 1906 at Catford. Whilst at Leyton the T.'s often spent long hours at Wanstead Park close to the Roding river; in Catford the children were frequently in Ladywell Park playing along the Ravensbourne river, which flows through the park for over a mile. In Slough they live quite close to a small stream which runs by the side of Ragstone Road. Mr. Amoruso visited all these places, and found Simulium larvae and pupae in the Roding, in the Ravensbourne, and in the Slough stream.

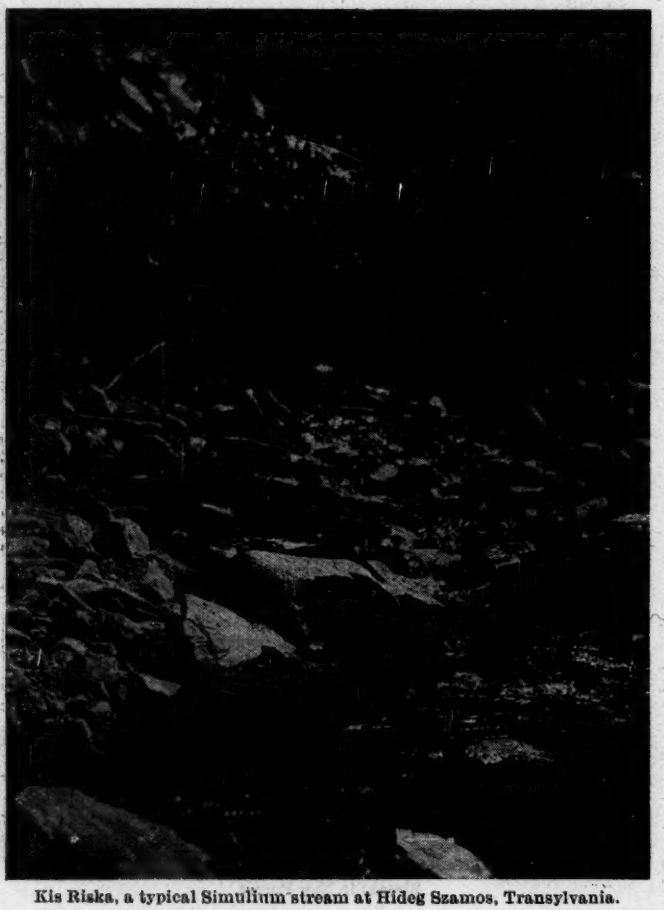
The little boy who presented a pellagrous rash this year for the first time was never at Leyton, therefore he must have contracted the disease either at Slough or Catford. The first case, which remained unrecognized, died soon after going to live at Slough, and had presented a rash on the face, neck, and hands during the spring or summer of three or four successive years; therefore he must have contracted the disease either at Catford or, possibly, at Leyton. The second pellagrin, Dr. Box's case, might have contracted the disease in any of the three above-mentioned localities; but, taking into consideration the three cases, it would seem more reasonable to suppose that all contracted it at the same place, and therefore at Catford, which seems to offer very suitable conditions.

Of course I exclude direct contagion, because the literature almost entirely and my own experience are unequivocally opposed to it. Pellagra is essentially an endemic disease. Like malaria, yellow fever, sleeping sickness, and other endemic diseases, it has its scattered, strictly limited stations, invariably and necessarily associated with the same peculiar ecological conditions. Within these stations the disease is rampant and affects newcomers; outside these stations it cannot be contracted, notwithstanding close and continued association with immigrant pellagrins. The most essential and striking physiographical feature in the pellagra station is the more or less swiftly-flowing stream. Pellagra appears to be linked to briskly-running water just as necessarily as malaria is linked to stagnant water. Indeed, it is interesting to note that in countries such as Italy and Roumania, where both malaria and pellagra prevail extensively, the two diseases, though overlapping in places, exhibit a decidedly inverse distribution. Pellagra prevails chiefly in the Piedmont section of the highlands trenched by lively streams; malaria prevails in the swampy lowlands.

In the non-endemic areas of pellagra countries, pellagrins are, as a rule, either absent or very scarce, and one rarely finds more than one or, at most, two cases in a single family or household; the patients are usually adults who work, or who have worked at some time or other, at some distance from home; young children who have never left the place are not affected. Within the endemic stations the disease is not limited to a few adults, but, as a rule, attacks all ages, both sexes, and entire families. Indeed, in certain places in Italy, such as Costapennacchio, near Nocera Umbra, Paradiso, and Rivotorto, near Assisi, Villa Pitignano and Cordigliana, near Perugia, Morra and S. Leo Bastia, near Città di Castello, I found practically the entire population to be affected, exactly as is the case with regard to malaria in many malarious localities. In my "Progress Report" of 1910 I gave the name and address of several families of no less than eight, ten, or more members, all presenting unmistakable signs of the disease.

Many more examples were met with by Dr. Chalmers and myself in places along the Brenta river in Southern Tyrol, and along the Brenta and Piave in Italy. Not infrequently, however, in families which have long resided in an endemic centre, the disease, although always evident in young children, is rarely manifest in the adults, who seem to have acquired a relative immunity not unlike that which is observed with regard to malaria in the inhabitants of malarious localities.

No place can be looked upon as a true pellagra station unless the disease is found to occur in very young children who have never been out of the locality. A number of authors, both old and recent, assert that pellagra is very rare in young children. My personal experience is that children are very liable to contract it, and that, within active pellagra stations, the incidence of the disease in young children is exactly the same as that of malaria in the children of malarious localities. The youngest case I can mention is that of an infant, Luigi Anselmi, of Le Cupe, on the Nestore stream, near Abbadia di Petroja, Italy, who developed the disease in 1911, when only 3 months old. At the time of my visit he still presented unmistakable evidence of the characteristic rash on the face and the dorsum of hands. Of the nine members of the Anselmi family living at Le Cupe no fewer than seven were manifestly pellagrins. They complained of the "mosciolini" (little flies) which at times were exceedingly troublesome, and I found numerous larvae and pupae of Simulium on the stones in the bed of the Nestore. On the left bank of the stream I met the youngest members of the Anselmi family driving a herd of pigs, which I was told also suffered each spring from a pellagra-like erythema.



Kis Riska, a typical Simulium stream at Hideg Szamos, Transylvania.

I have seen two other infants who were attacked by the disease at the ages of 4 and 5 months respectively. But such early cases are somewhat rare, the disease occurring, as a rule, between the sixth and eighteenth month. Pellagra, in fact, may occur at any age, and I have seen it frequently in elderly men and women who had contracted it for the first time after their fiftieth year of life. In several cases I found that the children had contracted it long before their parents, for the simple reason that they had gone to work in a pellagrous district several years before their parents.

One of the most important facts which I can bring forward in support of my theory of the etiology of pellagra is that of the almost inevitable infection of persons recently settled in a pellagrous locality. I have had the opportunity of observing it again and again. In my "Progress Report" I mentioned a few examples, such as that of the Pavinato family seen at Chiesanuova, near Padua, in the presence of Surgeon-General Blue, U.S.A., Captain Siler, U.S.A., and Dr. Lavinder. The Pavinato family consisted of a man, his wife, and five children. The parents were apparently healthy, but the five children presented evident signs of pellagra. All had contracted the disease during the same week, in the spring of the previous year, soon after reaching Treponti, a pellagrous locality amongst the Euganean hills in the province of Padua.

In the same year, at the Pellagrosario of Città di Castello, I had the opportunity of examining Veronica Pierni and her seven months' old infant, both pellagrins. The mother had contracted the disease during the previous year, soon after moving from a healthy village in the Apennines to Passano, on the stream of the same name. In November, 1911, the family Bruni moved from Lerina, near Vicenza, to a place called Contrada Rebecca, in S. Pietro in Gù (Padua). Early in May of the following year three out of its four members had developed marked symptoms of pellagra.

At a place called Pugliola, on the Puglia stream, in the province of Perugia, Drs. Magnini and Lupatelli of Deruta took me to see a boy, 8 years old, who was born and nursed till 5 months old in prison; then, in March, 1903, he was sent to foster parents at Pugliola. Here he developed severe pellagra in less than two weeks.

At Castione della Presolana, a mountain district in the province of Bergamo, Professor Balp took me to see Giovanni Ferrario, a powerfully-built man, 63 years of age, who had spent most of his life working in the mine districts of France and Germany. Nine years ago he had given up mining, and had bought some land in the neighbouring province of Brescia. There he contracted the disease the very first year he took up field work on his own property. When I saw him he was recovering from the fifth recurrence. This man had two sons; both had contracted pellagra many years before their father. Both had contracted it at the same time in the province of Brescia, whither they had gone together for field labour, one being 11, the other 9 years of age at the time. Their mother and sister, who had never been out of Castione, had always enjoyed perfect health.

These and many other cases that I might quote show very clearly, I think, that even strong, healthy people are liable to contract pellagra on moving into an endemic centre of the disease, and that infection usually takes place within the first epidemic season soon after exposure to the specific infective agent. Therefore, in this respect, pellagra is analogous to malaria, yellow fever, sleeping sickness, and other infectious diseases, with well-defined topographical limitations, which limitations are explained by and are dependent upon the biological necessities of their special insect intermediaries with corresponding topographical limitations.

Even in the old literature of pellagra cases can be found illustrating this fact in a striking manner. Thus, Balardini states that, according to Dr. Catotti of Borgonato and Dr. Ferrari of Orizinovi, the Tyrolese mountaineers who used to come to Lombardy in winter and return to their mountains early in spring, escaped the disease, whilst those who remained to work in the fields "after one year, or little more, contracted the disease."

The most interesting and suggestive observation I was able to make refers to the distribution of pellagra amongst

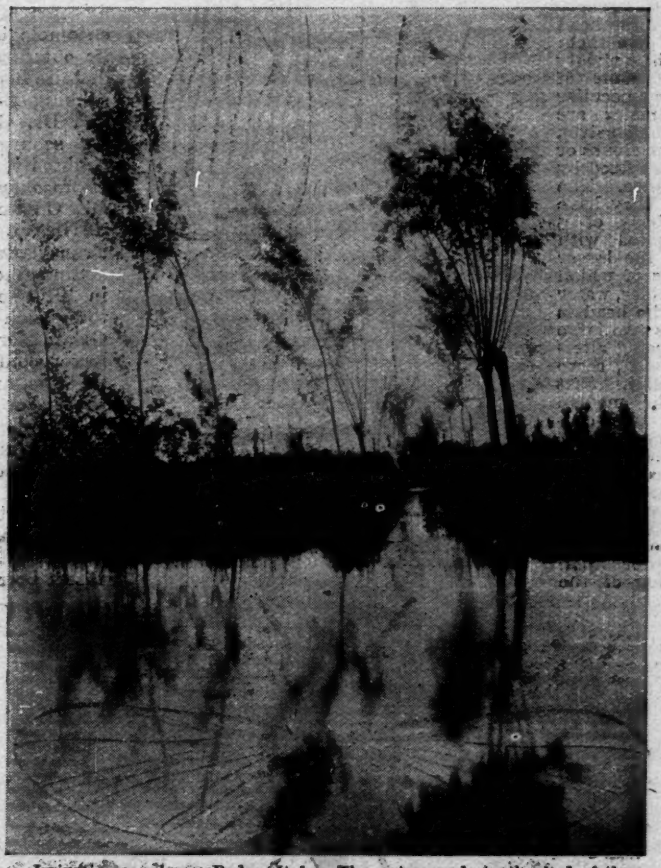
the islands of the Venetian Lagoon. Venice, with its urban population, is, as is well known, and as is the case in all towns, entirely free from pellagra. The island of Lido, just opposite, is likewise immune. Murano, close by, with its industrial population of world-famous glass-blowers, is also quite free. The islands that harbour pellagrins are: Pellestrina and Chioggia between Lido and the mainland to the south where the Brenta and the Adige flow out into the sea, and the group of islets formed by Burano, Torcello, Mazzorbo, S. Erasmo, etc., between Lido and the mainland to the north about the mouth of the Piave. Both Pellestrina and the Burano group of islets are inhabited principally by fishermen, who fish in various parts of the Lagoon, and not infrequently, especially in spring, for weeks together, along the mainland coast.

Burano is a small islet entirely covered by closely clustered houses. As a town one would naturally expect it to be entirely free from pellagra, just like the neighbouring town-islands of Venice and Murano, yet many of its inhabitants are pellagrins. But, whilst on the neighbouring mainland, and in all pellagrous districts throughout the world, the disease is, as a rule, more prevalent amongst women than men, the Burano pellagrins are almost exclusively men. Moreover, whilst on the mainland the disease is especially common in very young children, in Burano it has never been known to occur in girls, and only very rarely in boys, and not before their tenth year of age. Another interesting and telling fact is that whilst the disease is very common amongst the fishermen, it has never been seen in any of the Burano artisans who go every day to work at the Venice arsenal.

It is obvious, therefore, that Burano is not an endemic centre, and that its fishermen, who are very heavily taxed by the disease, contract it whilst fishing along the mainland coast, and especially near the mouths of the Brenta and other streams flowing into the Lagoon, where, they told me, they are at times greatly molested by veritable swarms of small biting flies. This explains why, contrary to the general rule, the disease in this island is restricted almost entirely to adult males and to the older boys who go out fishing with their relatives, and often sleep on the mainland. It explains the immunity of the men permanently employed at the Venice arsenal. It explains the immunity of the Burano women and girls who remain continually on the island to work at that wonderful needle-made lace, the "punto-in-aria," for which the island is famous. It explains the exceptional occurrence of the disease in the very few women who go to work in the fields of the neighbouring mainland. It excludes any idea of direct contagion, either by contact or sexual intercourse. It excludes house infection and direct aërial conveyance. It disposes of the maize hypothesis, because all the Burano people eat the same maize bought in the non-affected town of Venice, and it entirely overthrows the belief in hereditary transmission—a belief which, strange to say, has been most tenaciously held by the majority of "zeists." To my mind, all these facts strongly support the theory that pellagra is an insect-borne disease.

In the narrow, dyke-like island of Pellestrina the conditions are somewhat different. Here nearly one-third of the pellagrins are women, and a few cases have been reported in children who are said never to have been out of the island. There are no streams in Pellestrina any more than at Burano, and infection, if really local, can take place only by means of wind-carried insects from the almost contiguous mainland. In the same island also malaria has been observed in children who have never been out of the island, and the local physician, a well read and intelligent man, told me that *Anophelinae* are not indigenous, but that they suddenly appear and as suddenly disappear with certain winds.

A clinical fact to which I attach much importance, on account of the light it throws upon the etiology of pellagra, is that of the "recurrence" of the characteristic dermatitis and other symptoms every year until the patient either recovers, temporarily subdues the disease, or succumbs. These recurrences continue in patients far removed from the place in which the disease was contracted, and placed in asylums in which not only their surroundings are completely changed, but also their food and other habits.



Irrigation canal near Padua, Italy. The water-weeds in the bed of the stream were literally covered by the larvae and pupae of Simuliidae.

Three years ago I brought over to London a young pellagrin girl of Promano, a pellagrous locality near Città di Castello, Perugia. This patient had had the disease since early childhood, and her mother, also a pellagrin, had committed suicide during a period of recurrence. The change of food and life habits soon wrought a wonderful improvement in the patient's condition; and yet, in the spring of 1911, and again in April last year, she presented all the symptoms of the usual recurrence—weakness, headache, vertigo, strangeness of behaviour, and redness of hands and face, followed by furfuraceous desquamation of the epidermis of the affected areas.

These recurrences are in every way analogous to the recurrences which are seen in malarial subjects. I do not mean malarial relapses occurring at short intervals during the epidemic season, but the seasonal return to activity of the malarial parasites after their winter latency or "hibernation." It is this seasonal revival of the *Plasmodidae*, in old malarial subjects, that ensures the continuance and dissemination of the disease. Every year we notice first a veritable efflorescence of recurrences in old cases, at the season in which the new mosquito brood begins to assume the imago stage, then after an interval, during which the parasite undergoes its sporogonic cycle within the insect host, the new cases begin to crop up more and more numerous. The very same thing occurs in pellagra. In the first place, we have the spring recurrences in old cases occurring sometimes a little earlier, sometimes a little later, according to the more or less favourable meteorological conditions, then, later in the season, the new cases commence to appear.

Having made this observation in Italy in 1910 I was pleased to learn the year after in Bukarest that it was

fully endorsed by popular experience in Rumania. Drs. Lupu and Mironescu told me that it is common knowledge amongst the Rumanian peasantry that in old cases the pellagrous eruption "*o data cu coltue ierbei*," that is to say, occurs in March, "at the time when the new grass begins to sprout," whilst in new cases it appears always later, in April, May, or even June, obviously suggesting an insect intermediary and the necessary time for the transmission of the causative agent from previously infected cases to new subjects.

In my "Progress Report," published in 1910, I stated that I believed that the *Simuliidae* might eventually prove to be the insects concerned in the transmission of pellagra, especially on account of their topographical and seasonal peculiarities.

The *Simuliidae* are minute (1 to 4½ mm.), thick-set, dark-coloured flies, provided with moderately long legs, often banded with white, and large, broad transparent wings. Seen in profile, their strongly arched and downy thorax and the head with short, stout antennae give them a peculiar appearance, which is vividly depicted by the American name of "buffalo gnats." They have a peculiar darting flight, and the females are vicious biters (the males are inoffensive). The eggs are laid in patches on stones or water weeds, to which they are fixed by means of a gelatinous substance. The larvae are unmistakable. They have an elongated club-shaped body of a greenish-brown colour supplied with a large terminal sucker at the larger posterior extremity by means of which they attach themselves to pebbles, water weeds, and drift wood. The head is strongly chitinized, and bears two large fan-like appendages which, being alternatively retracted and expanded, serve to direct food into the gullet. Just below the head and on the median line of the first body-ring is a conspicuous proleg directed forwards and upwards and tipped by a small sucker. The larva spins a silken thread which offers a further means of attachment, and serves to weave the characteristic pocket or slipper-like cocoon at the time of pupation. The cocoon is open at the larger anterior end, from which protrudes the anterior portion of the pupa with two lateral tufts of long breathing filaments. At the time of pupation a bubble of air gathers round the splitting pupa case, and the emerging fly rises in it to the surface of the water without wetting its large iridescent wings.

The *Simuliidae* have a world-wide distribution, and are equally at home in tropical and arctic regions. They are found, as a rule, along briskly flowing water, be it a mere brooklet or a wide torrential river. Their seasonal incidence varies with the species and with the special ecological conditions of each place. In temperate regions, as a rule, they appear early in spring, and give rise to one or more broods. Inundations greatly favour their spread and prevalence.

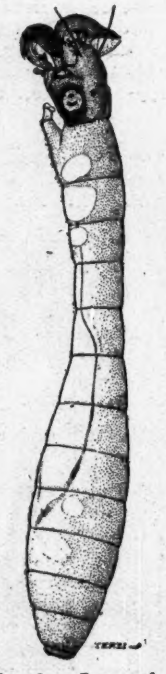


Fig. 1.—Larva of *Simulium*. × 8.

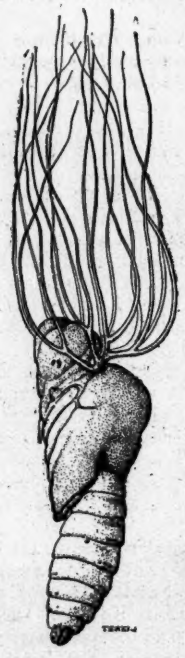


Fig. 2.—Pupa of *Simulium*. × 8.

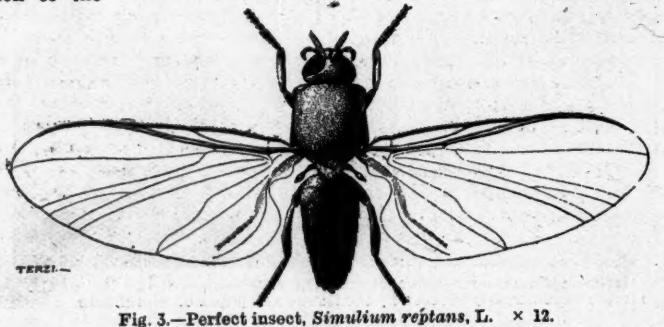


Fig. 3.—Perfect insect, *Simulium reptans*, L. × 12.

Simulium.—Larva, pupa, and perfect insect. From drawings by Mr. A. Terzi for the *Manual of Tropical Medicine* by Castellani and Chalmers. (Baillière, Tindall, and Cox. 1913.)

I spoke of the *Simuliidae* in general, and not of a single species, being fully cognisant of the conditions in other arthropod-conveyed diseases, such as malaria, trypanosomiasis, spirochaetosis, etc., but several writers, and amongst them Professor Howard, the learned entomologist of the United States, have accused me of incriminating only *Simulium reptans* and of wrongly ascribing to this fly a world-wide distribution. I may have spoken of *Simulium reptans* as a likely species, and I may have stated that, like *Anopheles maculipennis*, it is found both in the Palearctic and Neartic Regions, but I have certainly neither stated that *Simulium reptans* has a cosmopolitan distribution, nor that it is the one and only species likely to be concerned in the propagation of pellagra. Indeed, as stated in my report, in Italy the species I found most frequently and abundantly were *Simulium pubescens* and *Simulium ornatum*, var. *fasciatum*. Moreover, how can one speak of the distribution of *Simulium reptans* when entomologists are not yet agreed as to what is to be called *Simulium reptans*? Far from limiting to one single species of the family *Simuliidae* the rôle of pellagra transmission, I am inclined to extend the number of possible carriers and include certain blood-sucking midges, such as *Leptoconops*, for instance, which belong to the family *Chironomidae*. Of *Leptoconops*, until quite recently, we had no knowledge whatever, and even now we know very little about it. The reason for considering *Leptoconops* a possible carrier is based chiefly on observations made by Dr. Chalmers in the Nile Delta. In 1911 Dr. Chalmers visited Zagazig and other pellagra districts in Lower Egypt, and made a very diligent search for Simulium larvae. He did not find any, and his negative results were confirmed by Mr. Gough, the Government entomologist. On the other hand, he obtained from the fellahin a very definite history of small, black blood-sucking flies appearing in swarms, and Dr. Gough told him that this fly scourge of the Delta is undoubtedly *Leptoconops*. Species of *Leptoconops* have also been found by Dr. Chalmers and myself in the pellagra districts of Italy and Transylvania.

Since the publication of my report, in 1910, several American investigators, such as Drs. Wood, Roberts, Grim, Morse, Fitts, Johnson, Elrod, have confirmed my topographical findings, and some have adopted my theory of the etiology, suggesting, however, that the insect intermediary might be either the stable-fly (*Stomoxys calcitrans*) or some mosquito. As already stated in my report, I see no reason for incriminating either stable-flies or mosquitos. If, as I believe, pellagra is an insect-borne disease, the insect carrier must coincide geographically, topographically, seasonally, and in every other respect with the disease. This appears to be so in the case of the *Simuliidae*, and may be so in the case of certain little known midges, such as the one I have mentioned.

The two new cases reported in this paper, together with the others previously recorded, show that pellagra is widely distributed throughout England and Scotland, and that notwithstanding the apparent latency of the disease it behoves us to look very seriously into the matter.

So long as pellagra was supposed to be a kind of food poisoning, due to the consumption of maize damaged by certain moulds, such as the green species of penicillium, a few cases, widely scattered in space and time, could be of no great consequence; but if we believe the disease to be an infection, and an insect-borne infection, as my researches have very forcibly suggested, then these cases assume a very different aspect; they appear as links in a regular chain of cases, the majority of which must have passed unnoticed whilst fostering and spreading a distemper of great gravity.

The example of the United States of America is most instructive. A few years ago pellagra was believed to be unknown. Spitzka, in his *Treatise on Insanity*, published in 1883 (p. 124), says: "Pellagrous insanity will not be

discussed in this volume, as it does not occur in America." Sir William Osler, in the sixth edition of his *Practice of Medicine*, published in 1906, states that the disease "has not been observed in the United States." In 1907 George H. Searcy reported an epidemic of pellagra at the Mount Vernon Asylum for Negroes, Alabama. The same year Drs. J. W. Babcock and J. J. Watson recognized the disease at the State Hospital for the Insane at Columbia, South Carolina. Babcock and Watson's report aroused considerable attention, and, although at first it was received with scepticism and was even made the object of ridicule, it led to a thorough investigation of the matter, with the result that now pellagra is known to prevail in no fewer than thirty-three States, and that since its recognition in 1908 over 30,000 cases are computed to have occurred (Lavinder).

As in Italy, France, Spain, Rumania, Transylvania, Corfu, Egypt, and wherever and at whatever time pellagra has been recognized, so in the United States we are told the same old story of its sudden appearance as a new disease; but cases had been recognized in New York and Massachusetts as early as 1853, and Dr. Babcock has traced back the disease in South Carolina to 1834.

It was in 1735, in Spain, in the district of Oviedo, that pellagra was first recognized as a distinct morbid entity by Don Gaspar Casal, but the disease had long been known under the name of *mal de la rosa* in the pueblos along the rivers Nalon and Nera. At that time the disease must have been as widely distributed throughout the Iberian peninsula as it is now. In 1740 Feijoo stated that it prevailed in Galicia. In 1820 Joaquin Eximeno pointed out that the *mal del Higado* in the districts of Alcaniz, Daraca, Terruel, and Morella in Aragon was no other than pellagra. In 1835 Mendez Alvaro recognized it in Quintamar de la Orden, Corral de Almagner, and Villamayjos de Santiago, where it was called *flema salada*; and in 1847 D. Juan Andres Enriquez found it, under the name of *mal de monte*, at the confluence of the rivers Duero and Tormes.

In Italy the first published account of the disease was written in 1771 by Frapolli, who adopted the name *pelagra*, by which it was known to the Lombard peasantry. When he wrote, the disease already occupied the very same places in which it now prevails, ranging throughout the north of Italy from the Julian Alps to the Alps of Piedmont and from Lake Maggiore to the river Tiber. Professor Giuseppe Antonio Pujati had observed it in Feltre in 1740, and, according to Terzaghi, it had been seen ten years earlier at Sesto Calende on Lake Maggiore. Dr. Carlo Brabanti had observed it in 1730 at Campo S. Piero, Padua, and, according to Albera, Dr. Bava had noticed it as early as 1720 in the Ligurian mountains. It is interesting to notice that Frapolli spelt the name pellagra with one *l*, in the Spanish manner, and that other Italian popular names of the disease, such as *mal rosso*, *salso*, and *calor del fegato* are the exact equivalents of the Spanish popular names *mal de la rosa*, *flema salada*, and *calor del Higado*. It is therefore justifiable to assume that they arose during the Spanish predominance which lasted from 1530 to 1700. It is also quite possible that the name of the rose in Scotland still in use amongst the peasantry to indicate any erythematous affection of the skin may have a similar origin. The history of pellagra in Italy is most interesting and takes us back to the thirteenth century, when we may possibly recognize in the very stigmata of the gentle friar of Assisi this scourge of the humblest and lowliest.

In France pellagra was first described by Jean Hameau in 1829, but the inhabitants of the Landes and of the Pyrenean valleys knew it by diverse popular names, such as *Dartrès*, *gale de Saint Ignace*, *gale de Saint Agnan*, *mal de Sainte Rose*, *mal de Saint-Amans*, *mal des Saintes-Mains*. These names were much older than the recollections of the oldest local practitioners to whom the disease had always been familiar. For ages the Gascony pellagrins had been in the habit of flocking to Bascons to procure a soothing ointment from the hands and feet of an old crucifix for their own erythematous extremities.

In the Southern Tyrol the disease is no less ancient than in other parts of Europe. Michele Comini observed it in 1795, and ten years earlier the great poet and naturalist, Goethe, referred to it in the account of his journey from Brenner to Verona.

According to Dr. Alexander Takács, pellagra appeared in Hungary in 1877 in the district of Magasfalva, but Bouchard in his *Recherches nouvelles sur la pellagre*, published in 1862, states that it had been observed by Professor Sigmund, of Vienna, in various parts of Hungary, and especially along the banks of the Danube and Theiss.

Turning to Africa, we find that pellagra was first recognized by Abeille, a French army surgeon, in 1832, amongst the Arab tribes of La Calle between Bone and Tunis. In 1847 Pruner reported it from Egypt and in 1858 Emile De Bucherie observed it in the valley of the Bou Merzoug in Algeria. Hirsch, in a note to the chapter on pellagra in his *Handbook of Geographical and Historical Pathology* says: "The statements as to the occurrence of pellagra in Hungary and the Banat, in Egypt and in Algiers, are based upon quite untrustworthy information." Recent observations have fully confirmed the earlier statements and show that pellagra is widely distributed throughout the African continent. In 1893 Dr. F. M. Sandwith demonstrated that the disease not only occurs but is greatly prevalent in Egypt, and in 1907 Dr. Ferrer confirmed its presence in Algeria. In 1891, Myles reported it from Tokar on the Red Sea. Later, Sandwith found it amongst coloured lunatics from South Africa on Robben Island. In 1910 Dr. Hugh S. Stannus discovered it in Nyasaland, and in 1912 Dr. P. A. Nightingale described cases in Rhodesia under the name of "zëism." According to Dr. Nightingale the disease he has termed zëism is "most certainly *not* pellagra," but his description of the symptoms and the picture he gives of one of his cases show quite plainly that the disease he reports is most certainly pellagra. I am in possession of further information of a somewhat vague nature indicating the possible presence of the disease in Zululand, Abyssinia, and the West Coast.

In the West Indies pellagra is also of recent recognition. We know that it is found in Cuba, Jamaica, Porto Rico, Antigua, St. Lucia, Barbados, Trinidad, and other islands, but until quite recently it was confounded with sprue and other diseases.

Our knowledge of the distribution of pellagra is still very incomplete, not only in tropical countries, but even in Europe. With regard to Asia, we have hardly any information at all, and yet it must prevail over wide tracts of that continent. In 1902 Dr. U. Ray observed it in North Behar, India, and quite recently (1912) Dr. Sidney Sheppard has recognized it in the Straits Settlements. Our information with regard to South America and Australasia is very scant indeed. In Europe there are many places where it probably prevails unrecognized. In 1820 Henry Holland stated that he had seen cases in Iceland resembling the pellagra which he had observed in Italy. Possibly the disease occurs in the Scandinavian peninsula. Certainly it has been observed in places in Russia and in Poland. To the knowledge that we have of the distribution of pellagra in Italy we must add the southern provinces and the islands of Sicily and Sardinia. In 1883 Professor Silvio Venturi observed some cases in the province of Catanzaro, Calabria, and as far back as 1819 we find reports of cases from Cattanea, Sicily. In 1903 Dr. Guido Garbini described five typical cases of pellagra in Messina, but he labelled them "pseudo-pellagra" because they occurred in people who had never eaten maize.

That pellagra should have long escaped recognition in most countries is, perhaps, not surprising; but what is truly extraordinary is that it should continue to be overlooked and remain unheeded in places after due recognition.

In France it is now generally believed that the disease has completely died out. This opinion, unfortunately, is erroneous. Together with Dr. Chalmers, I saw a few cases in the Landes in 1911, and the same year Drs. Voivenel and Fontaine described 20 cases observed by them in the asylums of Auch (Gers) and Saint-Lizier (Ariège). It is certain, however, that pellagra has become far less prevalent in the Landes, and it is important to notice that simultaneously malaria has likewise almost entirely disappeared from the region. About fifty years ago both pellagra and malaria were rampant; now a case of either disease is looked upon as a rarity. The simultaneous regression of pellagra and malaria has been brought about by the same agencies—namely, improved drainage, intense

cultivation, greater prosperity, and, last but not least, the introduction of great quantities of fish in all the streams and collections of water. In the case of the *Anopheles*-conveyed malarial infection one can readily understand the operation of these improvements, introduced not for the purpose of combating disease, but on agricultural and economic grounds. I believe that the rise and fall of both malaria and pellagra, occurring simultaneously and under identical changes in the conditions of environment, is a fact which strongly suggests analogous causative agents (protozoal organism and insect carrier) in the etiology of these two diseases.

A CASE OF PELLAGRA IN ENGLAND,

PROBABLY CONTRACTED IN SCOTLAND.

BY

J. A. B. HAMMOND, M.B.,

SHANKLIN, ISLE OF WIGHT.

RECORDED cases of pellagra in the United Kingdom appear to be sufficiently rare to make it important to publish a short account of what I believe was undoubtedly an example of this disease.

A young lady, aged 33, from Banffshire, was sent to Shanklin in the early summer, 1911, on account of her health. She usually led an active outdoor life, playing golf, gardening, and so on, but in the spring of 1911 she began to suffer from persistent headache, lassitude, loss of appetite, constipation, coated tongue, abdominal pain and tenderness, most marked over the right iliac fossa. These symptoms were associated with an evening temperature of 99° to 99.6° F.

When I first saw the patient the general impression was that of one suffering from a chronic toxaemia, probably of intestinal origin. In view of the abdominal pain over the right iliac fossa and the absence of any other discoverable focus, I thought very possibly the appendix was responsible. My partner, Dr. J. Cowper, agreed with this opinion and in due course removed the appendix; although it showed some signs of catarrh, such as might have spread from the caecum, there was nothing very definitely wrong with it. The patient made a rapid recovery from the operation and for three or four weeks seemed much better, having a normal evening temperature and comparative freedom from her toxic symptoms; so much so that we began to congratulate ourselves that, after all, we were right and the appendix had been the cause of her condition.

Then the abdominal pain and tenderness returned, so that even lightly to touch the abdomen made the patient wince. This was coupled with the passage of most offensive stools, containing mucus and a gradually increasing amount of blood, until the haemorrhage became really profuse and required urgent treatment to check it. Under the impression that I had now to deal with a case of ulcerative colitis, and as (owing to the previous removal of the appendix) appendicostomy was impossible, colonic douches of hazeline, adrenalin chloride, etc., were tried, together with various intestinal antiseptics (for example, acetozone, salol, beta-naphthol, guaiacol cinnamate, of which the acetozone was the most effective), and subcutaneous injections of sea-water plasma. In February, 1912, the faeces were examined with a view to having a vaccine prepared. Numerous colonies of *B. coli* with a short streptococcus were isolated, from which a vaccine was made and given during the next three months. This treatment appeared to do some good; the haemorrhage ceased and the motions were more healthy, the headache was less persistent and the temperature steadier, but the patient still remained in a toxaemic condition; her breath had a most peculiar musty odour, which continued more or less throughout her long illness.

In the late spring of 1912 she was taken out into the garden and for two or three days somewhat exposed to the sun; this was quickly followed by the appearance of an erythematous dermatitis over the back of the hands and wrists; the palms escaped, but on the wrists it crept round to the front as described by Dr. Charles Box; a little later it came on the cheeks and round the lips. At first we regarded it as a severe sunburn, but soon bullae appeared, and there was considerable suppuration especially from the lips and between the fingers. A little later the tongue and mouth became ulcerated; various applications were tried but with little benefit, the dermatitis subsiding very slowly.

About June, 1912, the patient entered on another phase of her disease. The toxic symptoms, which had for a time lessened, again became more evident, the headache was now quite acute, there was constant nausea and complete loss of appetite; she became very drowsy, could with difficulty be roused to answer questions, and finally was only semiconscious. I took 10 c.cm. of the blood, and it was examined by the Clinical Research Association, but with a negative result; daily subcutaneous injections of saline were tried, together with collosol argentum given hypodermically. After lasting some three weeks this condition gradually passed, the patient recovering sufficiently to get out in a bath chair, but only as an emaciated wreck of her normal self.

In the autumn of 1912 the abdominal pain and tenderness, which had never completely ceased, became more and more acute, and dominated all the other symptoms. The pain was always referred to an area (about 2 by 3 in.) in the middle line just below the umbilicus; it was always worse just before and after the bowels acted. Nothing gave any relief. At last, thinking it might be due to some adhesions secondary to the ulceration, I asked Mr. F. J. Steward to see the case, and, if he thought necessary, to operate. This he did on September 26th, 1912, but found nothing to explain the pain, although the whole of the intestines were very anaemic, the large intestine dilated and so extraordinarily thin as to be quite translucent. After this the patient's condition gradually went from bad to worse. She complained of constant and intense "heartburn" which nothing relieved. There was complete anorexia; jerky movements of the head, with spasms spreading from the shoulders over the body, developed; these were always most marked when the patient attempted to do anything, but except when under the influence of some sedative hardly ever left her. The knee-jerks were exaggerated. The cerebro-spinal fluid obtained by lumbar puncture was examined and found to be normal and sterile. The emaciation became extreme. To add to the pitiful misery of the patient the ulceration of the mouth and tongue returned and was deeper and more acute than before. A swab taken from the ulcerated surface of the tongue demonstrated the presence of a long streptococcus. Painting the surface with lunar caustic gave relief but did not really check the process; associated with this was profuse salivation.

Towards the end mental symptoms set in, the patient with a feverish activity writing long, rambling letters, often incoherent. She now evinced an appetite for the most extraordinary mixtures in the way of food, all dishes being made excessively sweet. There was also an unnatural anxiety to be left alone, apparently with a desire to try and get to the windows, but with what object was not clear. The prostration and cachexia became more and more marked, and finally the patient died on April 25th, 1913.

Permission for an examination of the abdomen was obtained, but revealed nothing further than had been noticed at the time of the laparotomy in September. There was apparently nothing to account for all the acute abdominal pain nor to show the source of the intestinal haemorrhage which had been such a marked feature at the beginning of the illness.

Looking back on the case with the three fairly definite stages—(1) the intestinal, (2) the dermatitis, (3) the nervous and mental derangement—there is little room for doubt that it was a case of pellagra.

As to the origin of the illness in this particular instance, I could elicit nothing definite—there was no history of eating maize; on the other hand, her sister tells me the patient was a frequent victim to insect bites, which were particularly troublesome in her case.

One of the difficulties in recognizing this disease, apart from its rarity and the scanty description of it given in the English textbooks, is the slow and interrupted way in which the clinical picture is unfolded, just as it would be difficult to interpret a cinematographic film the unwinding of which was unduly protracted.

ON May 28th a bill before the Pennsylvania Legislature, amending the existing law so that vaccination should be required only in times of epidemic, was thrown out.

ON PSYCHO-ANALYSIS.*

BY

DAVID FORSYTH, M.D., D.Sc., F.R.C.P.,

PHYSICIAN TO OUT-PATIENTS, CHARING CROSS HOSPITAL; PHYSICIAN TO THE EVELINA HOSPITAL FOR SICK CHILDREN.

I.

THE past few years have been uncommonly fruitful in psychological research of use in clinical practice, more especially in enriching our meagre store of methods of investigating and treating many of the everyday cases of psychical disorders. It is to one of the most helpful of these methods that these two lectures will be devoted.

To begin with, it may be recalled that these disorders have been classified as (1) psycho-neuroses, (2) neuroses, and (3) psychoses. The first named never have any but psychical origins—perhaps long since passed out of mind—and their symptoms are the end links of an unbroken psychological chain stretching back to the starting point. They are, from first to last, exclusively psychical, and can be cured only by tracing the cause and removing it like a foreign body from the mind. With the neuroses, on the other hand, the primary cause is physical, the symptoms lasting only so long as the cause continues to act, and, needless to say, they cannot be remedied by psychical methods alone; to this group belongs, among others, neurasthenia. Lastly, the psychoses result from toxic influences on the brain matter, the best known being the polyneuritic psychosis (Korsakoff's psychosis) associated with alcoholic peripheral neuritis.

As the psycho-neuroses alone are of interest to us here, the only additional specification that need be made is that this class is itself divided into three clinical groups—hysterias, phobies (horrors and uncontrollable fears), and obsessions (fixed ideas).

With this outline in our minds, it goes without saying that psycho-neuroses are not to be treated without an understanding of psychology, that is, of the science which, to quote the definition of the term, is concerned with "the nature, functions, and phenomena of the human soul or mind." The clinician, therefore, who proposes to treat psycho-neurotic patients must base his work on a deeper insight into the human mind than is afforded by the experimental psychology which deals with sensory stimuli, motor reactions, and the like. And, in contemplating this departure, he need not hesitate for fear of being drawn into metaphysical or theological speculation; on the contrary, he will find no occasion to move outside the firm ground of practical medicine.

Nevertheless, every now development in science, while its facts are as yet few, stands in need of a working hypothesis to help it to further observations. As to what hypothetical conception of the mechanism of the human mind will best serve psychology in the long run opinion is likely to differ, but, thanks to Professor Freud, one is already to hand which has proved itself at once a key to the nature of many psychical disorders and a guide to their cure. This work of Freud's, or, rather, that part of it on which is based the clinical method of psycho-analysis, will now be considered, any apparent dogmatism of statement in the following account being attributed, it is hoped, to the necessity of compressing a large subject within the limits of a lecture.

II.

At the springhead of human nature is feeling, pleasant and unpleasant, which shapes itself into desires, themselves the motive force to action; and once action has been taken gratifying a desire, the feeling it embodies is discharged. Feeling (psychologically "affect") of the one kind or the other is attached in greater or less degree to all ideas. Moreover, when a new idea seeks entry to the mind, the kind of feeling bestowed upon it is not a matter of chance but is determined by the kind already attached to similar ideas previously entertained—a precedence of events leading back ultimately to the emotions and ideas of childhood, and conferring upon this age a hitherto unsuspected importance in moulding the affective attributes of the adult.

This influence of the past on the present mental life is of cardinal importance. For, suppose we postulate in every individual a mind that is two-storied—an upper chamber, small and furnished with the thoughts and feelings of the moment, and a lower, large and filled with the thoughts and feelings which, in the past, after serving their brief purposes above, have been put away as memories—we have a picture of a consciousness which is transitory, and a subconsciousness which reaches back through an unbroken series of states of consciousness to the beginning. This subconsciousness will contain the entire panorama of the past.

The contents of consciousness pass down into subconsciousness, where, as memories, they wait to be recalled. These memories prove to be arranged, not haphazard, but on a system which keeps together those most nearly related, either in point of resemblance or of time or of both. Further, these memories preserve their vitality indefinitely, no matter how deeply buried beneath the ever-growing mass of subsequent memories. It may be concluded, therefore, that the subconscious mental life is continuous, consecutive, and indestructible from childhood onwards.

But this conception needs elaborating, more particularly in its affective bearings. Subconsciousness is the source from which feeling is drawn to be imparted to every new idea. But since, as has been shown, the choice of the kind of feeling lies with past experience, the mind will, as a rule, approach every new experience under the influence of past feelings—an act of mental prejudice which consciousness habitually acquiesces in, or, rather, never suspecting the bias, is at no special pains to render null. In fine, consciousness, rarely permitted to approach a new matter without subconscious prepossessions, is overruled (or guided, as the case may be) by what has gone before, a conclusion once again emphasizing the psychological importance of childhood.†

The operations of the faculty of memory are made possible by the orderly arrangement which associates every memory with kindred memories preceding and following it, so that when the wish to recall some particular memory arises the method is to lay hold of the near end of the chain and to draw it link by link into consciousness until the required memory is found. Memory, therefore, is essentially a process of mental association.

It is not to be supposed, however, that consciousness is powerless to regulate the admission of memories. On the contrary—and here we come to another phenomenon of the greatest practical importance—it exercises habitually a censorship, a janitor's office, the door being freely open to pleasant recollections, but closed to others whenever possible. Furthermore, memories which are peculiarly distressing will often be forcibly pent up in subconsciousness—a psychological act known as "repression"—and never be permitted to invade consciousness.

But apart from all conscious efforts to remember and to forget, there are means by which memories can find their own way into consciousness, whether wanted or not, though only under the impulse of strong feeling. During sleep, for example, when the control of consciousness is withdrawn, thoughts and feelings, more especially such as have been repressed, may emerge from subconsciousness to occupy the theatre of the mind with dreams. On such occasions several desires or fears, the heritage of many years, will often crowd into one and the same dream, where they figure in fantastic and extravagant disguises, symbolic of their real meanings. The task of psychologically interpreting this symbolism, though not easy, discloses the subconscious influences that mostly dominate the dreamer's waking life.

III.

The outlets, when a wish or desire presses upon the mind, are three—two healthy, one morbid. The average individual, in these circumstances, first recognizes the existence of the desire (psychologically, he accepts the idea with its feeling into his consciousness), and then decides on one of the two healthy courses open to him. Either he determines to gratify it, in which event the feeling, finding a natural outlet, is discharged, and he is rid of his desire. Or, weighing the benefits of this simple

*The substance of two lectures delivered at the Polyclinic, London.

† On the vast majority of occasions the superior control of the intellect is not invoked, and never on the occasions that count in producing a psycho-neurosis.

release against various criteria—prudential, social, ethical, religious, and so on—he decides against gratifying it, whereupon these opposing considerations swamp the feeling, and again he is rid of his desire.

But the psycho-neurotic, though no doubt following one of these courses on most occasions, adopts a third in respect to some wish (or fear), which becomes of great significance in his mental life. A wish, for example, enters his mind, which he either finds unattainable or is unable to bring himself to the point of action to gratify; but, at the same time, the thought of its realization is so pleasant to him that he equally fails to turn upon it those intellectual or moral forces which could quench it. Instead, he retains it in his consciousness, to play with it in his fancy. But, with it pressing all the while for gratification, a psychical situation may follow which, at first unpleasant, ultimately becomes intolerable. Should this happen, some escape must be made. And this, if both the healthy courses are still rejected, is by way of forcibly thrusting or repressing the desire into subconsciousness. Here, however, though it is no longer thought about, its feeling, never having been discharged, struggles for recognition, and demands an outlet. A state of psychical conflict is the result, the pent-up feeling contending against the repressing forces of consciousness. In the end a compromise is effected, the feeling being diverted into a morbid channel, along which it flows to make its reappearance as a psycho-neurotic symptom. If it emerges blended with some bodily process, it stands henceforth as a hysterical symptom—headache, tremor, vomiting, etc. Moreover, the symptom, by relieving psychical tension, expresses subconsciously the gratification of the repressed wish, and on this account affords the patient satisfaction.

By what psychological mechanism in this deflection of feeling brought about? Briefly, the desire (that is, idea plus feeling) has been dealt with by forcibly separating the two parts. The idea, no longer buoyed up by feeling, sinks out of sight to the bottom of the mind. The feeling, liberated and unattached, is not thus easily disposed of, however, but is transferred to some other content of consciousness which, now supported by an unwonted amount of feeling, rises prominently and insistently before the mind. If, as is often the case, the normal feeling thus added to is derived from a bodily source of feeling, the region of the body thus concerned will become invested in consciousness with abnormal feeling, figuring conspicuously in the mind and becoming a symptom of hysteria. But if the liberated feeling is added to some purely intellectual idea, this, equally buoyed up with excessive feeling, projects unduly into consciousness, and what was originally, perhaps, a trivial thought becomes an obsession or a phoby.

It is to be particularly emphasized that any such psychological disturbance, though apparently subsiding, leads, in point of fact, to a definitely morbid state of mind. The patient, far from gaining real relief, has merely shifted the burden from consciousness to subconsciousness, and henceforth labours under a psychical disorder which, inevitably interfering with the healthy functioning of his mind, handicaps him, more or less, in his daily life.

At the same time it must be recognized that a natural tendency towards a return to health is never wanting: *vis medicatrix naturae* is as potent in mental as in bodily complaints. In the former it aims at terminating the psycho-neurosis by withdrawing the feeling from the morbid channel into which it has passed, and sending it up into consciousness, there to be got rid of by one of the two healthy courses. The repressed feeling, therefore, is always ready to attempt to break forth from its confinement, however slight the provocation. Often this is some trivial occurrence which in ordinary circumstances would, by the association of memories, recall the repressed thought. Some such passing incident is enough to set the repressed feeling in commotion, with the result of renewing the old psychical conflict and determining a return or an exacerbation of the hysterical symptom. In all these attacks the resistance still comes from consciousness which successfully withstands the attempted invasion.

It should be explained that any mass of feeling thus repressed is spoken of as a "complex." The psycho-neurotic, therefore, lies at the mercy of his submerged complexes (in many cases more than one complex must be reckoned with), and these feelings, at no time under control, are all the more formidable for working subconsciously. The essential pre-requisite to the cure of a psycho-neurosis is the identification of the complexes. The practical means to this end will be described later.

With regard to the important question of the starting-point of the psycho-neurotic habit of mind, Freud has identified this with a derangement of the sexual feelings in childhood. He has shown that, contrary to the general assumption, these feelings assert themselves, not at the time of puberal change but in very early life, at least as soon as the pleasurable sensations to be derived from the genitalia are apprehended. They cannot fail, therefore, to be of great account among the affective influences of childhood, and least of all are they to be overlooked in the problems of morbid psychology. The treatment of this aspect of a case requires to be handled judiciously, and it would be incorrect to assume that every psycho-neurosis, before it can be cured, must necessarily be traced to an infantile sexual origin. Freud himself records a case in point ("The Case of Miss Lucy R.," *Selected Papers on Hysteria*), where a successful result was attained without carrying the investigation into the patient's childhood, and in an example I shall give later a cure was effected without any reference to sexual matters. Nevertheless, the weight of evidence is that sexual feeling (using the term not in its narrower meaning but to include also the various manifestations of love—filial, maternal, etc.) plays the leading part in causation, and the treatment, therefore, may not be efficacious until the condition has been traced to its source.

IV.

Turning now to practical methods, let us suppose the attention of the mind to be bent upon some one thought. Before long another thought will be found to rise in its place, and this in its turn will be succeeded by another, and so on—a sequence which, never fortuitous, follows the lines of subconscious associations. This mental process of passing from thought to thought without any conscious direction is known as "free association." As it plays a leading part in psycho-analysis, the following simple example will not be out of place. In putting together the notes for these lectures I had occasion to call upon my memory for Professor Janet's views on hysteria, and was working over them step by step, when suddenly there flashed upon the screen of my mind a picture, vivid as life, of a military statue bathed in sunshine; at the same instant, though no inscription was visible, I knew that it commemorated General Buller. The mental connexion between this obtruding thought and Janet's views on hysteria was completely hidden from me until traced by free association. The thought which then succeeded that of Janet's views was of his book of lectures on the *Major Symptoms of Hysteria*. Next came the recollection that these lectures had been delivered (as stated in the preface) before a medical gathering in the United States. This in its turn brought to mind another medical gathering—of the British Medical Association—which I myself had attended to read a paper some few years ago at Exeter. And then, once again, up came the statue of General Buller. I now recalled myself on the top of an electric tram at Exeter, passing, on my left hand, this statue, which at the time was in the full sunlight of a summer morning.

If this method of free association is employed by a psycho-neurotic, some of his chains of thought are bound to lead, sooner or later, and generally sooner, towards a submerged complex. In fact it offers the surest means of rapidly tracing the disorder to its origin; sometimes, indeed, with its help, a morbid conflict twenty or even thirty years ago, and altogether forgotten, will be brought to light within a few minutes. On the other hand, not every thought can be thus relied on, and, unless much time is to be wasted in unproductive associations, some means of preliminary selection is needed. What is wanted is a ready method of exploring a patient's mind to ascertain in what directions the complexes are to be sought. Just as, with a case of an organic disease, it is customary to make a routine examination of all the systems, to be amplified by a more detailed investigation of any organ that appears to be not healthy, so, in a psychical disorder, a general survey of the mind is indispensable if the

thoughts associated with complexes are to be speedily recognized.

This need is met by the "word association" method first made known by Jung of Zurich. A series of words ("stimulus words"), not fewer than 100 in number and preferably 200, is prepared from among the nouns, verbs, and adjectives in everyday use, care being taken to include, so far as possible, references, direct and indirect, to all the human emotions. These words are then read over, one by one, to the patient, who has been previously instructed to listen attentively and to reply to each as quickly as he can with the first word that occurs to him. His "reaction words" are noted, and the time taken to reply measured by a stop-watch. At the end of the test it is commonly found that, while the replies to many, probably most, of the stimulus words have been made without difficulty and within two or three seconds (the average reaction time being 2.4 seconds), the result in the minority of instances is very different. The reaction time may be 30 or 40 seconds or even longer. Sometimes a reply is not forthcoming or it is merely a repetition of the stimulus word. Yet again, it may take the form of a question or an explanation, the patient forgetting his instructions.

The practical value of this method is as great as its *rationale* is simple. It hangs on the fact that words in ordinary use establish different associations in different minds, so that each stimulus word tends to awaken the memories which happen to have clustered round it in the patient's past mental life. Should any word in the list have become associated with an emotional experience, this latter is likely to be stirred; but, on the other hand, if it is an experience which has been repressed by a psychoneurotic, its readmission to consciousness will be stoutly resisted. For all that, however, the stimulus word being unexpected by the patient, his consciousness, taken off its guard as it were, is not quick enough to prevent the subconscious feeling from being set in commotion, and in an instant the old opposing forces are arrayed against each other, with the result that for a few moments the patient's attention is distracted and he forgets his instructions. Perhaps the first word that rises in his mind will be rejected, since it would lead perilously near to the complex, and another has to be sought and, if found, substituted, the reaction time being, of course, prolonged. Not infrequently the stimulus word will be found to occasion obvious agitation or mental confusion, which the patient may endeavour to hide from himself by hastening with an explanation or a question. In fine, the word association method is a rapid means of testing the patient's feelings on one or two hundred subjects; it is like the ringing of a handful of sovereigns to detect any that are unsound.

The following example, taken from a case of hysteria, will illustrate the application of the method.

Stimulus Words.	Reaction Words.	Reaction Times.
Water	River	1.8
Child	Boy	1.6
To pay	Money	1.0
Finger	—	26.0
Cold...	Fire	1.2
Sad	The first word I thought of was "wise," but that hasn't any connexion, has it?	12 0
Pride	Vanity	2.2
To fall	To hurt yourself	0.8
Fur	Coat	1.4
Dear	—	34.0
To quarrel ...	Yes, but it's so silly. A boy.	30.0
Big	Man	1.4
Family	Mother	3.0
Contented... ...	Mind	1.4
Nice...	—	44.0

It will be noticed that while the replies to the majority of these test words were given well within the average time, five of them were delayed for from twelve to forty-four seconds. In three of these no reply was made, and in the other two the responses were wide of the instructions. It could be concluded, therefore, that each of these five had impinged upon a submerged complex. Without superfluous detail it may be explained that the patient in this case was a hysteric, and proved to be the subject of, amongst others, two complexes. One was connected with her engagement, which, though she was in love with her fiancé, she had broken off on account of his habits of life. The other was related to a lifelong series of unpleasant experiences with drunkenness. Her fiancé, a couple of years after becoming engaged, took to drink. A few years previously her brother, convalescing at home after a serious illness abroad, fell among dissolute companions, and the patient was involved in many distressing scenes when, to screen him from their father, she used to go to his help on his return in the small hours drunk and incapable. Earlier still, when she was only a child, her father himself would come home occasionally from business under the influence of drink, at these times showing violence to her mother, and her experiences at that age proved to be the starting point of the drunkenness complex.

To return to the five words; two of them, "dear" and "to quarrel," proved on association, as might be expected, to refer to the patient's engagement complex. The significance of the other three, "finger," "sad," and "nice," was quite obscure until the method of free association was employed. The association to the first ran: "finger," "ring-finger," "wedding-ring," and thence direct to the engagement complex. The second brought the following: "sad," "sad news," "sad news in a letter," after which the patient called to mind the particular letter from her fiancé, soon after their engagement was ended, telling her that he was leaving England for good two days later; and this recollection led, in its turn, to that of a parting interview the next day, which had been followed, on the next day again and at the hour he sailed, by an attack of hysteria. Lastly, the associations to "nice" were "niec," "nasty," "nasty habits," "Why can't you doctors cure people of drunken habits?" and so immediately to the other submerged complex.

V.

Jung's method, therefore, indicates the associations to be followed up without necessarily disclosing the nature of the complexes. These are to be found, as in the case just mentioned, with the help of the patient's free associations to such of the stimulus words as caused psychoneurotic reactions. In passing to this stage it is important to realize that the associations, implying as they do the re-entry of repressed thoughts into consciousness, will not be readily followed up by the patient, whose resistance, on the contrary, becomes stronger the more nearly a complex is approached. Not that this defensive attitude is deliberate; the patient is probably only too anxious to assist, but, when it comes to the point, his morbid habit of mind proves too strong and he finds himself unable to speak what is entering his mind. This resistance is, perhaps, the greatest obstacle in the way of psychoanalysis, and is to be overcome only by perseverance, patience, and sympathetic handling. To some extent it can be weakened by first explaining the method to the patient, giving him an account of normal psychological processes and the manner in which a psychoneurosis develops. At the same time it is often well to point out the difficulties in his path, however anxious he may be to avoid them, and to let him understand that they can be and, if a cure is to be made, must be overcome.

The resistance is to be looked for in various guises. Most commonly it shows itself by a sudden check in the flow of associations, the patient affirming that no thought now rises to his mind; but though this will sometimes be true, it is more often a signal that a complex has come into sight. Again, some unpleasant thought that has entered the mind may be withheld and another offered in its place. Here, however, the break in the sequence of thought may attract notice. On yet other occasions, when an association is being pushed against resistance, the patient will make little of the matter, suggesting it is not worth following up. Not a great deal of experience, however, is needed to recognize these subterfuges. In fact, it

may be said that, within limits, the more readily an association is forthcoming, the less likely is it to be leading towards a complex. Nevertheless, the resistance once overcome, and the complex forced up into consciousness, the patient is willing enough, as a rule, to fill in the details. This applies, however, only to the particular experience under analysis, the resistance being renewed, perhaps as vigorously as before, as soon as the next stratum of subconsciousness is about to be opened.

When a few of these word-associations have been investigated, light will probably be thrown on several others, and fresh lines of advance suggested. Finally, as the case is gradually worked out, a significant fact can be expected to unfold itself, namely, that the first emotional experience to be brought into consciousness leads to an earlier, and this to others still earlier. Indeed, in most if not all cases it will be found that the complexes date back to some emotional disturbance in childhood.

As supplementing the word-association method, the analysis of the patient's dreams is invaluable. Without any attempt to go at all fully into this aspect of the method, it may be said that though, as was explained in a previous lecture, repressed desires and fears are ready to disclose themselves in dreams, even here a certain resistance is encountered—the janitor sleeps with one eye open. Consequently, it is by no means unusual for a desire to appear so disguised by symbolism as to be recognizable only after analysis. Most dreams, therefore, present a twofold meaning, the one superficial and apparent, the other underlying and real; psychologically speaking, they comprise a "manifest content" and a "latent content." The latent content—which alone can elucidate a psycho-neurosis—is found by free association to the manifest content, the patient filling his mind with some detail of his dream, more especially one connected with feeling, and following up its associations.

When at last a complex has been traced to its origin, how is it to be made away with? This can only be done by bringing it well into the patient's consciousness, talking about it, discussing it, looking at it this way and that, the patient for his part setting loose the feelings so long pent up, no matter how painful the scene. In this way the morbid deflection is righted, subconsciousness is unburdened, and the mind put in the way of resuming its healthy functions. Already the analysis will have traced for the patient the steps in the development of his morbid symptoms, and now the reasons must be put before him for the resistance which has kept the feeling in repression. Finally, since long habit will have left him but little practised in consciously recognizing his feelings and desires, still less in submitting them to control, he needs must remodel his attitude towards his own mental phenomena—on the one hand accepting feelings as an integral part of the mind, indispensable, indeed, to its full development, on the other acknowledging the higher faculties of reason and judgement as the final court of appeal against their impositions.

To bring the subject to a close, a few words must be said on the actual procedure to be followed in the consulting-room. The case having been diagnosed, the first visit should be allotted to an explanation of the method of treatment, together with a general outline of normal and morbid psychological processes. The second may be devoted to the patient's own account of his life-history; and though, as subsequent analyses almost invariably prove, he will pass over or, at most, touch only very lightly on the matters of greatest moment in his mental life, this visit is by no means time lost, but serves to establish confidence and mutual understanding. The third visit may be set apart for the word association test, and the subsequent progress will be planned according to its results. The patient, when freely associating, should lie on a couch, his eyes closed, the better to keep his attention from being drawn elsewhere, while the physician takes up a position behind the head of the couch, where his presence is least likely to be obtrusive. In the earliest associations—at any rate before the patient has grown accustomed to the method, and perhaps, is still a little sceptical of its success—the following plan may be adopted to start each refractory association. The patient is warned that pressure is about to be made, for a few moments, with the hands upon his forehead, and that, when this is released, a thought or a picture will rise to his mind. As soon as this has been done, he is asked, "What thought has come to your mind?" or, "What picture do you see?"

VI.

As may well be supposed, the reports of cases investigated on these lines often run to some length, but the following two examples are chosen as being short and representing the most prevalent variety of psycho-neuroses, the phobies. The first illustrates the use of free association, the second the value of dream analysis.

In the first the patient was affected by the very common phoby of darkness, her fear dating back as long as she could remember. Though of middle age, she was unable to venture out alone after dark without being dogged by fear until she was safely home again, while even to go upstairs at night, if the lights were out, was an ordeal to her. For many years she had never trusted herself to sleep without a light burning in her room all night.

On associating to the thought of this fear she recalled various occasions when it had specially affected her, and finally came to one which, she felt assured, was the starting point. As a young girl she was on a visit to a schoolmate in the country, and one afternoon the two walked to a neighbouring village to call on some friends. At tea she felt herself growing anxious lest their return should be delayed until after dark, but, though she urged her companion to leave in good time, they lingered talking and did not set out until after night had fallen. During their three-mile walk home along dark country lanes the patient was filled with a vague but intense fear, and to this experience she attributed her phoby.

Two points in this account suggested the need for further analysis. First, her anxiety showed itself at tea-time when it was still light; obviously, therefore, the fear antedated this evening walk. Secondly, it is open to question whether any one goes in fear of darkness *per se;* this phoby, when analysed, commonly proves to be, not a fear of darkness, but of what may happen under the cover of darkness. The analysis, therefore, was continued, the real, though unsuspected nature of the phoby being speedily unmasked. She recalled that she was afraid, not of the darkness itself, but of the dark country lane, and, next, that this fear was really a fear of meeting some one in the lane. But this, again, resolved itself into a fear, not of merely meeting, but of being spoken to by some one. Finally, she found that the real fear at the back of her mind was that, meeting some one in the dark lane who should stop her under pretence of speaking, she would be attacked and murdered.

This conclusion necessitated a free association to the thought of being murdered. At once an incident came to mind from her early childhood, when she had listened to a conversation between her father and mother about a railway murder which had been committed—in Yorkshire, she inclined to think—as the train passed through a tunnel. This was the first murder she had known of, and the account terrified her; she particularly remembers the impression made upon her by the fact that the murderer waited for the covering darkness of a tunnel before attacking his victim. From that time she has harboured the fear of being herself murdered in some dark place, though, until the phoby was analysed, she had not consciously distinguished it from a phoby of darkness. When, after this short analysis, she was made to understand that because some unknown individual was murdered a quarter of a century and more ago in a Yorkshire tunnel, therefore she kept her bedroom light burning, and generally went in present fear of being murdered in the dark, the phoby speedily passed under control, and within a week or ten days was dispelled.

In the other example, illustrating the value of dream-analysis, the patient was profoundly and, indeed, painfully influenced in her daily life by a morbid horror of death and everything connected with death; not its least distressing aspect being a dread of live burial. Unable to remember a time when the thought of death was without these feelings, she had come to regard them as almost natural, but, nevertheless, so completely was she at their mercy that her fervent wish had always been to set herself free from them. As might be expected in these circumstances, she was unable to offer any explanation of the origin of the psycho-neurosis.

On one of her visits, however, she mentioned a dream of the previous night. It was quite brief. In it she saw her mother lying dead; she regarded the spectacle with the utmost composure. With the help of free association to the thought of the dream, she recalled first an identical dream some six month ago; then another of the same sort about a year before the second; and from this passed from one such dream to another (occasionally her father, but usually her mother figuring in them as dead) until it became evident that this particular dream had recurred at varying intervals for more than twenty years. Finally, she recalled an instance from her very early teens. Instead, however, as seemed probable, of continuing the series back to her earlier childhood, she now said that a picture rose before her mind. She saw herself as a little child of four or five, playing on a hearthrug, while, close by on a couch, lay an old gentleman. She recognized him as a friend and near neighbour of her parents. She remembered that she used often to be allowed to go to his house, and would play on the hearthrug while he, presumably an invalid, reposed on the couch, talking to her. She also remembered that on these occasions the wife was never present, and, looking back on these visits, she was inclined to think that she was sent to be company for the old man when his wife went out.

Asked to associate to the thought of this neighbour, she at once recalled how, on going to the house as usual one morning, she was met in the hall by the wife, who told her that the old man was dead. And now followed the incident which was the cause of her lifelong phoby. The wife led her upstairs into the death chamber. The child said she was afraid, but the other, telling her there was nothing to be afraid of, crossed the room and drew back the sheet from the figure on the bed. This frightened her the more. The wife, thinking, it must be supposed, to act reassuringly, then compelled the little child to approach the corpse, to put out her arm and touch its cold cheek. The sensation filled her with penetrating horror. For days she could not get it out of her mind. Then, child-like, she began to reason with herself. If, she argued, her old friend had died, as they called it, and grown cold, other people probably died and grew cold. In that case her mother (for whom she bore great affection) must die and grow cold. The thought of this took hold of her, supplanting the recollection of the icy feel of the dead man, but at the same time drawing to itself the intense feeling of this earlier experience; and thereafter, so the patient recalled, whenever she was alone she brooded on the thought of her mother's death, at night crying herself to sleep with the same thought. This went on for several years until, when she was in her very early teens, her mother became seriously ill and the child was packed off to relatives in the country. Here, where no one knew the fear that was eating out her heart, no one troubled to keep her too well informed of her mother's progress. And then, for the first time, she dreamed that she saw her mother lying dead, but the sight moved her not at all.

The result of this illness was to leave her with an intensified horror of everything suggesting death. About this time, moreover, she learnt, from a conversation between an elder brother and sister over their school lessons, the story of the Black Hole of Calcutta, and the thought of the fate of Surajah Dowlah's victims haunted her until she imagined a similar end for herself. This new terror, working on the old, engendered yet another monstrous fear—namely, that she might be buried alive, and, reviving in her coffin, be suffocated to death.

For brevity, this sombre history has been given only in outline, but, in conclusion, the following fact, which was gradually established by the analysis, though hitherto unknown to the patient, must be added. When any incident in her daily life touched, all subconsciously, this death-complex—such as passing a funeral in the street, calling on a sick friend, or seeing an actor die on the stage—the effect was a severe headache, very often violent enough to incapacitate her.

THE late Professor Duhring has left about £16,000 to the University of Pennsylvania and the hospital connected therewith. Part is to be applied to the foundation of a museum of cutaneous diseases, and a sum of £10,000 is allocated to the hospital for the maintenance of wards of free beds for the treatment of skin diseases.

OBSERVATIONS ON THE TOXAEMIAS OF PREGNANCY, AND ON EUGENICS FROM THE OBSTETRIC STANDPOINT.

Being part of a Valedictory Address delivered before the Section of Obstetrics and Gynaecology of the Royal Society of Medicine by the Retiring President.

BY

AMAND ROUTH, M.D.LOND., F.R.C.P.LOND.,

CONSULTING OBSTETRIC PHYSICIAN TO CHARING CROSS HOSPITAL.

EUGENICS, or the well-being of the race, is now one of the prevailing instincts of our generation. The value of the potential mother and her unborn babe as a national asset is becoming increasingly recognized. I propose to examine the subject very shortly from the medical and the social point of view.

1. THE MEDICAL IMPORTANCE OF EUGENICS FROM THE OBSTETRIC STANDPOINT.

The crux of the whole question is the safety of the mother and child during pregnancy, labour, and the puerperium.

The facts that over 3,000 women (3,179 in 1909) die every year in England and Wales from puerperal septic disease and accidents of childbirth, and that in the same year 99,430 infants died during their first year of life, and that in addition there were about 19,000 stillbirths, make this statement a self-evident truth. It will not be possible to speak now of many of the causes of this maternal and infantile mortality, but I would like to say a few words on the efforts being made to unravel the pathological mysteries of the toxaemias of pregnancy which directly or indirectly cause a large proportion of this terrible waste of life.

The Toxaemias of Pregnancy.

In my presidential address of October, 1911, I alluded to several diseases, both in obstetrics and gynaecology, the etiology or pathology of which was to a large extent undecided, and amongst them I instanced in obstetrics the toxaemias of pregnancy, ectopic gestation, phlegmasia alba dolens, pyelonephritis of pregnancy, and hydatidiform degeneration of the chorion, with its not infrequent sequela, chorion-epithelioma.

As regards the toxaemias of pregnancy, I drew attention to the increasing recognition of the fact that investigations should be made by physiological and pathological chemists regarding the auto-toxaemias, if our knowledge of the etiology and treatment of hyperemesis gravidarum, chorea gravidarum, albuminuria, eclampsia, acute yellow atrophy of the liver, and puerperal insanity is to be increased. In printing my address, the BRITISH MEDICAL JOURNAL[1] published a leading article, entitled, "Where Chemistry and Medicine Meet," and the *Lancet*[2] also published an article on "The Return to Chemistry," both expressing their cordial concurrence with my views. These leading articles helped materially to stimulate interest in the subject. There is no doubt that during these last two years more progress has been made in our knowledge of the functions of the placenta and of the function and interaction of the ductless glands, including the ovary and its lutein tissue, than was previously possible. Dr. Blair Bell and Miss McIlroy have been working on these lines for some years, but a whole army of experts are now engaged in this form of research.

If the foreign journals are examined, more particularly the German, it will be seen that this chemical investigation and the effects of injection of glandular extracts upon animals is becoming increasingly prominent.

As further evidence of the interest now attached to the chemical aspect of the toxaemias of pregnancy, I would allude to the large numbers of books recently published on the "internal secretory organs" or on "the function of the ductless glands," in every case dealing with the influence exerted by the secretions of these organs upon menstruation, pregnancy, lactation, and the puerperium in both animals and man.

The clear advice in the report of the Royal Commission on the University of London as to the need of the perfect equipment of the "hospital unit" is only another indication that it is now being generally recognized that clinical

work can only be scientifically and satisfactorily carried on if the medical officer in charge has at his disposal laboratories suited for the complete examination, treatment, and demonstration of every case. Such laboratories would be devoted to physiology, bacteriology and vaccine-therapy, bio-chemistry, microscopy, *x*-ray and electrical work, and a general laboratory for the students.

At hospitals in London all these laboratories to some extent already exist for the general use of the staff, except perhaps the bio-chemical laboratory as a separate entity, and it is this particular method of research which, in my opinion, is now the most important for the efficient and scientific management of every obstetric and gynaecological hospital unit.

Much has been done by bacteriology to explain puerperal septicaemia, as well as various local and general infections such as gonorrhoea, bacilluria, syphilis, pyelitis of pregnancy, etc., but physiological chemistry is now needed to help.

In general medicine microbes do not explain gout, diabetes, Graves's disease, Hodgkin's disease, or even rheumatoid arthritis. Physiology has unravelled some of the mysteries of myxoedema, acromegaly, and Addison's disease, but none of these diseases can be fully explained without further light from physiological chemistry. In our own special subjects microbes do not sufficiently explain eclampsia and the other toxaemias of pregnancy. Our ignorance of the causation of puerperal albuminuria and eclampsia, acute yellow atrophy of the liver, hyperemesis gravidarum, chorea of pregnancy, and puerperal insanity is still profound.

It is now well established that in addition to the physiological functions of the placenta, the ovaries, and the mammary glands, these organs have important internal secretions which may be either neutral, toxic, or antitoxic under different circumstances.

The Placenta.

Much excellent work has been done of late on the chemical physiology of the placenta.

It seems clear that ferments are produced by the trophoblastic layers of the chorionic epithelium of the placenta, and that these exert a destructive action upon the surrounding maternal tissues. By this action toxins are apparently normally produced and auto-toxaemia may result, under circumstances at present unknown to us. These enzymes or ferments can be demonstrated according to Abderhalden in the blood of pregnant women from the sixth week of gestation to a fortnight after delivery, and their presence provides us with a method of serum-diagnosis of pregnancy which Dr. Herbert Williamson considers absolutely reliable. With the object apparently of neutralizing these toxins, and of preventing auto-toxaemia by rendering the woman immune, antibodies are formed, and are found in the maternal blood between the sixth and fourteenth weeks of pregnancy, the period of the maximum destructive activity of the chorionic epithelium.

Mosbacher[3] has also shown that syncytial cell albumen of the early human placenta contains a toxin which is able to produce fatal anaphylaxis in guinea-pigs in thirty minutes, but he finds that antibodies which neutralize the syncytial toxin are found in the blood of pregnant women right up to the end of the gestation period.

These toxins have not yet been isolated, nor is their chemical composition known with any more certainty than in our student days, so that we do not even know if Abderhalden and Mosbacher are speaking of the same toxins.

Acidosis in Pregnancy Toxaemia.

The importance of the phenomena of acidosis in pregnancy toxaemia, on which Dr. Walter Swayne read a paper last session, has led to much attention being paid to that aspect of the question. In an article published in the *Lancet* on May 17th, 1913, Dr. Herbert Williamson further discusses the problem of the diagnosis of the albuminuria of pregnancy, and considers that we are justified in concluding that a condition of acidosis is found constantly in severe cases of pregnancy toxaemia and not in cases of severe chronic nephritis, unless toxaemia has been superadded. If this be so it is a great gain to our previous knowledge on the subject, and clears the line for further discoveries and for more intelligent methods of treatment.

Internal Secretion of the Ovaries and of the other Ductless Glands.

The physiology of ovarian secretion was discussed during last session by Dr. Louise McIlroy in a most valuable contribution, and during this session Dr. Blair Bell, in the Arris and Gale Lectures at the Royal College of Surgeons, has added some valuable facts and suggestions to our knowledge of the genital functions of the ovaries and of the other ductless glands. He dwelt especially upon the effect of removal or disease of the thyroid, the pineal, the pituitary, the thymus, and the suprarenal glands upon functions of the ovaries and the uterus. He further dwelt upon the organic harmony of the ductless glands in health in regard to the genital functions, and upon their altered inter-relations in disease. A valuable review by Dr. Louise McIlroy in the May number of the *Journal of Obstetrics and Gynaecology of the British Empire* has brought our knowledge of ovarian secretion up to date.

As regards the action of the internal secretions of the ductless glands, it is now established that there is not only an organic and functional harmony between them, but a compensatory interaction between all the glands as well. Each gland acts in a particular manner upon the blood stream passing through its tissues, altering its chemical constitution by a chemical process, and often adding to it important organic bodies of vital importance to the well-being of the individual. If any organic disease or abnormality exist in a particular gland, the missing or altered function seems often to be taken on by other ductless glands, so that the individual is saved from disaster. In other cases the altered metabolism of one gland upsets the normal metabolism of other ductless glands and the individual is seriously affected.

The significance of the whole subject of internal secretion is enormous, and its full recognition is still in its infancy. Dr. Blair Bell, in his Arris and Gale Lectures, said: "It is probable that every cell in the body is a ductless gland and has some influence on the life and functions of the rest." If so, it is easily seen how groups of functionally similar cells can, by forming organic products, act as chemical messengers, or "hormones," as Dr. Starling has called them, and influence the whole body organization. Dr. Blair Bell has also proved in the above lectures that these "hormones" exert a special influence upon "the reproduction of the species in all its intricate necessities." When the ovaries and the other reproductive organs atrophy and become functionally inactive, he further says, "the genital functions of the rest of the ductless glands cease, and the rearrangement of the metabolism that follows produces what are known as the symptoms of the menopause." He suggests that a knowledge of the special function of each of the ductless glands and a close study of the particular menopause phenomena in each case may enable us to treat the symptoms with more success than at present. To treat all the ills of the menopause with ovarian or lutein extract when the symptoms point to the effects of altered metabolism of another ductless gland is not logical.

Lactation.

Physiological chemistry is throwing much light upon the physiology of lactation. It has long been known that lactation is not determined by nerve excitation. A case of my own, when normal parturition and lactation followed complete paraplegia below the fifth dorsal vertebra from an accident six months previously, confirmed this. Recently Sir Edward Schäfer, F.R.S.,[4] showed experimentally that mammary secretion is induced as the result of galactagogue hormones circulating in the blood derived from the posterior lobe of the pituitary body, from the corpus luteum and the involuting uterus, and from the lactating mammary gland itself, whilst hormones derived from the placenta and the fetus during pregnancy have an inhibitory effect.

2. THE ENDOWMENT OF MOTHERHOOD.

The nation—all civilized nations—in these days of a lessening birth-rate, is waking up to the realization that a pregnant woman and her unborn babe is a national asset worthy of every care and consideration.

We hear much nowadays of the "endowment of motherhood." The Obstetrical Society of London by its successful efforts, spread over fifty years, to improve the

condition of lying-in women and to lessen infantile mortality has done much to endow motherhood in its truest and most comprehensive sense. The "endowment of motherhood" is not only to be obtained by providing financial assistance to the mother, as is done, for instance, by the maternity benefit of the Insurance Act after labour. The chief aim of those seeking to endow motherhood should be to give every mother an assurance of security and well-being during the whole time of pregnancy, labour, and the puerperium, each of which is to her a period of anxiety and stress.

Apart also from all sentiment or sympathy with the individual, "the unmarried mother and the unwanted child," as Harold Begbie phrases it, demand both our professional consideration and the protection of the State.

During the Pregnancy.

This security should be ensured during the pregnancy by skilled professional advice followed by wise, tactful supervision. For the professional advice to be really effectual, a sufficient and in many cases a pelvic examination of every pregnant woman should be made during the middle months of gestation, especially if she be a primigravida. Her urine, also, should be scientifically examined, especially as regards albumen, and if she has previously had abortions or stillbirths the quantity of urea should also be estimated. If evidence be forthcoming that toxaemia is present, or that labour may be abnormal or difficult, the practitioner should be able to arrange for the woman to continue under expert supervision. This is difficult, even in private practice, but almost impossible under our existing conditions as regards the poorer classes. Dr. J. W. Ballantyne's[5] suggestion of a prematernity or pregnancy ward or pavilion seems the best way of meeting the case. The necessary treatment could then be carried out. If surgical treatment were required it could either anticipate or accompany the onset of labour as occasion demanded, instead of being adopted, as it often is now, as an emergency operation, after repeated pelvic examinations or instrumental attempts at delivery before admission. We know that "pregnancy wards" reduce the risk of all obstetric operations enormously; Caesarean section, for instance, has its maternal mortality reduced from 34.3 per cent. in cases previously examined, etc., to 2.2 per cent. in clean cases, such as those who had been inmates of a prematernity ward.[6]

Paul Barr[7] shows that in placenta praevia cases, out of 108 patients treated as "emergency cases," he had 10 deaths from infection, whereas no deaths occurred from this cause in 48 cases in the pre-maternity wards. This plan is now adopted in many of our lying-in hospitals or wards in large cities, but to ensure such security to every pregnant woman a routine examination during the middle months is essential, as well as suitable accommodation within a reasonable distance.

From the point of view of the unborn child, routine examination of the mother during pregnancy and adoption of appropriate treatment is essential if we are to have any success in dealing with intrauterine mortality. Eugenics should begin before birth, not afterwards. A child has the right to be born healthy.

Careful inquiry should be made as to the causes of previous abortions or stillbirths, and of the deaths of previous children soon after birth, for I am convinced that congenital syphilis, entirely unsuspected, is not infrequently the cause of both fetal and early infantile mortality. As small doses of mercury given to the woman during pregnancy will in such cases often give her a healthy child, every effort should be made to tactfully discover whether such treatment is indicated. It must be remembered that, apart from a history of stillbirths, etc., a woman may show no indication of specific infection. Sometimes information can be obtained by inspecting the mother's other children. There is no doubt that apart from congenital syphilis, which varies in importance in different nationalities, and even in different localities (urban and rural), the three main causes of stillbirth are albuminuria (toxaemia), pelvic contraction, and malpresentations.

It has been computed that, if women were properly examined in pregnancy, half the stillborn children would be saved. If so, this would mean an annual saving of nearly 10,000 fetal lives in England and Wales, for, omitting abortions, there were 2,312 stillbirths notified in London alone during 1910, or 2.2 per cent. of the total births. If this proportion holds good for England and Wales, the number of stillbirths in that year would be 19,736, and we could hope to save 9,800 lives by routine prophylactic measures.

Chambrelent[8] has a large clinic for pregnant women in Bordeaux, and he there examined 642 pregnant women during 1910. He found that 135 women presented complications or abnormalities requiring special care, and as a result of such care the birth mortality was reduced to 2.85 per cent., or a saving of two-thirds as compared with the official figure.

The registration of births should, in my opinion, be compulsory, not only after "viability" as regards births and stillbirths, but should be enforced at every period of pregnancy. If this were done, and the practitioner or midwife were also requested to state the apparent cause of the death or of the expulsion of the ovum, we should, as a first result, begin to realize how little we know of the causes of intrauterine mortality, and, as a second result, we would obtain some statistical knowledge of the huge waste of life continuously going on, and in time would arrive at some precise knowledge as regards etiology and prophylaxis.

Much good might be done by a careful examination both of the fetus, placenta, and membranes, in all abortions and stillbirths in our hospitals. This would accustom the student to that particular type of investigation, and might encourage a continuance of it when in private practice later on. This plan was adopted in 180 consecutive cases of stillbirth by Dr. Herbert Spencer between 1887 and 1900, and his paper of nearly 100 pages[9] is one of the most valuable and suggestive in our annals, showing, amongst other things, that haemorrhages into the brain and other organs are a frequent cause of death during labour.

During Labour.

There is no doubt that the prospect of obtaining the 30s. maternity benefit under the Insurance Act enables poor women to approach the time of labour with a greater sense of security than heretofore, and if some arrangement or pre-arrangement could be arrived at by which the benefit could be paid as soon as the birth was notified, its advantages would be very much greater.

Expert or hospital treatment can usually also be secured if special surgical interference be required.

During the puerperium, however, there is often little or no skilled supervision after the first ten days, and the early cessation of supervision tends to encourage the mother to return to work and to married life at a much too early date. The early return to work is the cause of much maternal illness, which is often pelvic, and leads to either a disinclination for, or even to a dread of future pregnancies, or to real physiological inability to conceive again, or to intrauterine fetal death if pregnancy should again supervene. The child too often suffers, even more than the mother, from the latter's early return to work. Errors of diet, neglected ophthalmia, or uncleanliness may each cause permanent ill health. Much is being done in large cities where factory girls are numerous to encourage rest during the earlier period of uterine involution, and the medical and sickness benefits of the Insurance Act further encourage this, but much more requires to be done.

Schemes to provide home nursing for insured persons by arrangement between local nursing associations and approved societies now being organized bid fair to be very successful. Approved societies and Insurance Committees have the power under the Act "to grant subscriptions for the support of district nurses," and Queen Victoria's Jubilee Institute for Nursing the Sick Poor, and town and county district nursing associations throughout the country, acting in harmony with these approved societies and with the Central Midwives Board, are doing much and can do much more to lessen the risk of maternal illness and infantile mortality during the few weeks following labour.

Infantile mortality under 1 year of age in England and Wales was 163 per 1,000 in 1899, and is now about 105. This represents a saving of life of over 52,000 infants a year. Very much, however, remains to be done, for in 1909 there were 99,430 deaths of infants in England and

Wales under one year of age, and nearly 40,000 of these died in the first month of life. Out of 1,000 births 11.5 children die in the first twenty-four hours of life, 24.6 infants in the first week, 30.3 in the first fortnight, and 39.75 during the first month. Roughly speaking, out of every 10 children who die in the course of their first year of life, 4 die in their first month.

If the nation could come to look upon maternity as a blessing and worthy of every encouragement and support, and could secure to the newborn child a month's healthy start in life, many of these babes who now die from the ignorance of their mothers, from unhealthy environment, or improper or insufficient food, would survive. It must be remembered, too, that a healthy child who has survived the first month of life has every chance of growing up well, for it is the weakling who dies, not the robust child of a happy, healthy mother. Infantile mortality is being greatly diminished in localized areas by organized home visiting and nursing, and by special effort to encourage lactation instead of artificial feeding, and if the nation, as a result of its appreciation of motherhood and of the greater relative value of the life of the newborn, can make these local efforts a national one, and at the same time avoid the moral disaster of pauperization, the race cannot fail to be improved, and the wealth and stability of our country thereby must be proportionately increased. Our Section will not fail to encourage progress in the scientific portions of such an obstetric ideal.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF NON-FATAL VERONAL POISONING.

ON account of the largeness of the dose, among other reasons, the following case of veronal poisoning seems worth recording. The patient, a man aged 45, who had been in the habit of taking veronal freely on account of sleeplessness, was admitted to hospital in a totally unconscious condition. His face was flushed, the cheeks puffed out at each respiration, and the breathing was stertorous; there was no corneal reflex, and the pupils were insensitive and unusually contracted. There was also incontinence of urine and faeces.

As no history could be obtained, and the symptoms pointed to poisoning from some preparation of opium, the stomach was washed out with a weak solution of potassium permanganate, while $\frac{1}{50}$ gr. atropine sulphate was given hypodermically and repeated twice within the next two hours. Hot coffee was also given rectally at intervals.

Immediately after the gastric lavage the corneal reflexes returned, but otherwise the condition remained unaltered until four days after admission, when signs of returning consciousness appeared. The patient then gradually improved, and was, on the fifth day after admission, able to give a definite history of what had happened. He stated that he had taken 125 gr. of veronal in one dose.

It is a point of interest that the symptoms differed entirely from those usually associated with veronal poisoning, and that the treatment adopted would have been regarded as contraindicated had we known that veronal was the poison taken; its tendency was to lock up the secretions rather than to increase them by means of diuretics. Nevertheless the patient recovered, though the dose taken was, so far as I can learn, one of the largest ever swallowed without a fatal result.

Let me also add that as the stomach washing took place at least five hours after the poison had been taken, it was probably useless, for I understand that veronal leaves the stomach within the first two or three hours after its introduction. Hence practically the whole of the poison taken must have been absorbed, and yet the patient recovered.

Bradford. J. BROWNING ALEXANDER, M.B., Ch.B.

ETIOLOGY OF BERI-BERI.

THE memorandum at page 1271 of the JOURNAL of June 14th is interesting, and I have no doubt similar evidence could be supplied from all countries in which beri-beri is endemic.

I cannot quote statistics or figures from the official reports of the Brazilian sanitary authorities as I have not the opportunity of seeing them here, but I can state certain facts in regard to the province of Matto Grosso, in the far interior of Brazil—facts which ought to be faced by those who are seeking proofs of the "polished rice" theory of beri-beri.

The facts are the following:

1. Beri-beri has occurred and does occur in the southern Amazon regions, and in Matto Grosso in people who have never eaten rice of any kind at all.

2. Members of the various expeditions sent by the Brazilian Government for the defining of frontiers between Matto Grosso and Bolivia or Peru, and of the exploring and surveying expeditions of railway and telegraph companies in the heart of Matto Grosso, who sickened of beri-beri, had come from other provinces and had been polished-rice eaters all their lives, but had never contracted beri-beri until they came to the districts where that disease is endemic. Why had they not contracted beri-beri in Rio de Janeiro or in Rio Grande do Sul, where they had similar conditions of climate and temperature in which to eat their polished rice as they had when they went to the beri-beri districts of Matto Grosso? I know of Brazilian military men who were invalided down country from Acre on the Brazilian-Peruvian frontier, where they had contracted beri-beri. They ate polished rice amongst other things provided in their rations, but they had always eaten polished rice before going there. A German friend of my own, an explorer and geologist, accompanied an expedition to the far north of Matto Grosso. Forty members of the party died of what from my friend's description I consider was beri-beri. Yet these people had eaten polished rice for years before going to the beri-beri country.

3. In my own practice I have had various cases of beri-beri brought to me from Matto Grosso. The curious thing about those cases, which were undoubted examples of beri-beri, was that the patients were of the farming agricultural class, who grew their own rice, cleaned it themselves, and ate it brown in the grain, and had never, except perhaps by accident, eaten imported polished rice, and yet there they were—prostrate with beri-beri.

All due credit must be given to the earnest investigators who are seeking out the etiology of this obscure disease, and due consideration ought also to be given to the views of those who do not hold the current theory. Let us hope the investigators get outside their laboratories and study the disease of beri-beri in the countries where it is endemic. For there are many who see the cases and know the regions from which they come that cannot accept the food theory of its etiology, but believe that the causative agent is to be found only in the endemic districts.

Belén, Paraguay. J. W. LINDSAY, M.B.

As one who has suffered from beri-beri it is with the keenest interest that I note any observations in regard to it, and I feel that the present accepted theory as to its cause at least requires modifying; there has been too great a tendency to accept the case for vitamin deficiency as proven, if made, to refer to rice dietary only.

In the BRITISH MEDICAL JOURNAL of September 14th, 1912, there is, in a lecture by Dr. Leonard Hill, on the Influence of Muscular Exercise and Open Air on the Bodily Functions (p. 601), a statement which I had hoped would be referred to by somebody interested in the subject. Alluding to the Labrador fishermen, whose diet is quoted as in the main "white bread, tea stewed in the pot till black, fish occasionally, a little margarine and molasses . . . old dark-coloured flour" (note there is no mention of rice), he says: "In consequence of this diet beri-beri has become rife to a most serious extent, and the hospitals are full of cases."

The valleys of the Amazon and its tributaries furnish a larger number of cases than is ordinarily supposed. In a paper by my late chief, Dr. Carl Lovelace, of the Candelaria Hospital, Porto Velho, Brazil, published in the

Journal of the American Medical Association, December 14th, 1912 (vol. lix, pp. 2134–37), figures for the period January 1st, 1908, to January 1st, 1912, are given. Of 30,430 admissions, 963 were diagnosed as beri-beri. As my own case forms one of the number, and as I resided in the country for a year previous to being invalided out, I can speak with authority as to the diet not containing rice in a sufficiency to have a causal relation to the beri-beri incidence.

Brazilians of the peasant class, rubber gatherers (*seringueros*) and river men, etc., who are those most frequently affected, live on cassava (*farinha*), dried meat (*xarque*), bacon and red beans, with some rice and bananas when obtainable; but not on rice as a staple.

Personally for six months I ate no rice, and for a further six months only in curry, and that as an aside to a liberal diet of fresh meat and fish, eggs, fruit, vegetables, including potatoes and bread; in all twelve months not more than 2 pints of rice were eaten in any form. Alcohol as a cause of the neuritis, venereal disease, and malaria can be absolutely excluded.

These facts are given in the hope that some further light may be thrown on the causation of a disease whose etiology still seems to require investigation. Deficiency there may be, but some additional determining factor seems to be indicated, some complement wanted.

JAMES D. LAIDLAW,
Late Surgeon with the Madiera Mamoré Railway, Brazil.

A NOTE ON THE ACTION OF MESCAL.

SOME years ago I carried out a series of personal experiments, in conjunction with Dr. Havelock Ellis, on the effects of the reputed deliriant mescal (*Anhalonium lewinii*), making use of a strong infusion of the seeds or "buttons" of the plant; but, in my own case, with entirely negative results.

The full dose of the fluid extract of anhalonium (Parke, Davis, and Co.) is given in the *Extra Pharmacopoeia* as ℿx. I recently swallowed ℿl diluted, on an empty stomach, but again with negative results. However, acting on the advice of a literary acquaintance, a latter-day magician well known in the West End of London, who claims to have administered this form of the drug to hundreds of his clients, I proceeded to a dose of ℿc.

Fifteen minutes afterwards I experienced slight dyspnoea accompanied by transient headache, which symptoms were rapidly followed by intermittent tetanoid spasms in the hands and feet, and with a sensation of general *bien aise*. A sense of egotistical concentration, together with a delightful feeling of irresponsibility towards one's surroundings, succeeded, and lasted, in all, eleven hours.

No spectral illusions were present, however; neither there was any vertigo nor subsequent drowsiness.

The heart was accelerated during the whole of the period, the radial pulse varying between 80 and 90. The pupils were unaffected, and the digestive powers were undiminished.

London, S.W. BERNHARD SMITH, L.M.S.S.A.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN HOSPITALS AND ASYLUMS.

KASHMIR MISSION HOSPITAL.

A CASE OF CALCULI IN THE KIDNEY, URETER, BLADDER, AND URETHRA.

(By ERNEST F. NEVE, M.D., F.R.C.S.Edin., Surgeon to the Hospital.)

THE following case presents some unusual features. The patient was a Mohammedan, aged 36, who was admitted to the hospital with a history of pain in the vesical region, associated with difficulty in micturition for the previous five months.

On examination the urine showed an abundant deposit of uric acid and oxalate crystals, together with pus corpuscles and epithelial cells; it was also found that the urethra was partly obstructed.

On December 9th, 1912, two stones were removed by Dr. Jeffries from the urethra, and another small one was crushed and washed out of the bladder.

For the next twelve days or so the patient was more comfortable, but on December 22nd there were renewed symptoms of vesical irritation. A skiagram was taken, and showed a dark line running vertically downwards parallel with and one inch from the right border of the lumbar vertebrae.

Consequently on December 23rd, and with the kind help of Dr. Jeffries, I performed nephrolithotomy. One stone, weighing 85 grains, was removed from the kidney substance, and three from the renal pelvis. These weighed respectively 84, 30, and 20 grains, and were highly polished; the largest was branched. Four other calculi were removed with a scoop from the ureter about four to five inches from its attachment to the kidney. These averaged 15 grains each, and were also like polished marble. A lithotrite was then passed into the bladder, in case any stones had been pushed down, but none were found.

The wounds in the kidney were carefully closed with fine silk, and the line of parietal incision closed with sutures and without drainage. Healing took place by first intention, and was uneventful, except that on the first two evenings after the operation the temperature rose to 99.8° F.

REMARKS.—The somewhat dilated ureter no doubt favoured drainage of the kidney through the bladder. It is uncommon to find such a wide distribution of calculi. In the absence of renal colic or localized pain, the recognition of stones lodged in the ureter is not easy, but in such cases a distinct *x*-ray shadow at once draws attention to their presence.

Reports of Societies.

WIGAN MEDICAL SOCIETY.

AT a meeting on May 29th, Dr. J. THOMSON SHIRLAW, the President, in the course of a paper on the *Treatment of inoperable cancer by gland substances*, showed a patient, a woman aged 47, who had been treated by him since the end of July, 1911. When first seen she had a ragged ulcer with infiltrated edges on the right side of the pharynx, involving the oesophagus. The case was sent to Mr. Thelwall Thomas, Liverpool, who returned it as one of inoperable malignant disease of pharynx. The treatment consisted wholly of the exhibition of tabloids containing thyroid gland 6 grains, suprarenal ¾ grain, and pituitary $\frac{1}{15}$ grain. There was slow gradual improvement. By November she had put on 6 lb. in weight, could swallow much better, and felt stronger; towards the end of December could swallow anything except butcher's meat. In January, 1912, she weighed 5 lb. more than in November, and later still put on an additional 2 lb., so that she had gained 13 lb. in all. She had not had any tabloids for six months, but was still quite well. There remained at the site of the ulcer a certain amount of thickening and induration. Cancer, the exhibitor suggested, was due to two things: (1) Local irritation, (2) loss of a regulator of cell growth. The first resulted in the production of a large stock of young blood whose exuberant energy it was difficult to keep in subjection. "Malignancy was the insanity of function." The regulator of cell growth was a secretion of some of the ductless glands, which about middle age began to get exhausted. Cancer was due to the disturbance of the natural laws which governed the chemistry of the tissues, the result being that cells of an irritated tissue remained on and formed a tumour.

PROFESSOR A. POGOGEFF, Director of the Moscow Museum of Sociology, by way of celebrating the two hundredth anniversary of the death of Bernardo Ramazzini, the first writer on diseases of occupation, has suggested an international exhibition to be held at Moscow in the spring of 1914. The exhibition is intended to display the means for the protection of workers in all branches of industry. The scheme has received the approval of the Russian Minister of Industry and Commerce, of the Moscow Society of Medical Officers of Works, and of many medical institutions in Germany and Austria.

Reviews.

DIAGNOSIS AND TREATMENT OF DISEASES OF THE HEART.

In the second edition of his work on the diagnosis and treatment of diseases of the heart,[1] Professor Braun gives a comprehensive description of the prevalent views as to heart failure. He sets out briefly and concisely the chief factors connected with the physiology of the heart and blood vessels, including in the description the more recent views of the mechanism of the heart-beat from the standpoint of the myogenic theory. The author shows that he is conversant with the advances that have been made by the use of instrumental methods of investigation, and he embodies these results in his description of the symptomatology of the diseases of the heart, which otherwise follows conventional lines. He deals next with the treatment of heart affections, discussing at considerable length the use of digitalis and its allies. In dealing with cardiac remedies, it is interesting to note that he has not a word to say for the cardiac stimulant which the average British physician holds in such respect—namely, strychnine; but, on the other hand, he has his own favourite cardiac stimulants in camphor and caffeine. This shows that therapeutic beliefs, like religions, may vary with the locality. There are special articles on hydrotherapy and treatment by mechanical means by Drs. Strasser and Bum. These chapters are followed by others dealing with diseases of the endocardium, myocardium, pericardium, valvular diseases, and arterial disease, and the care of the injured heart. An index, which we find confused and inadequate, closes the volume.

The author deals with the phenomena revealed by means of the polygraph and electrocardiograph, but he does not assimilate the facts, treating them as of only academic importance, and failing to recognize that they throw a new light on the question of heart failure, and serve in many ways as a guide to treatment and prognosis. The author shows his unquestioning trust in the traditional view of heart failure, taking as an illustration what is supposed to happen in aortic regurgitation. Here he tells us dilatation and hypertrophy set in, which are at first compensatory; later the ventricle begins to fail, dilates further, and sends regurgitant blood back into the left auricle; this becomes embarrassed, and induces stasis in the lungs and engorgement of the right heart, with tricuspid regurgitation, dropsy, enlarged liver, and all the signs that are usually assumed to be evidences of heart failure arrived at in this particular way. If in place of accepting this belief, which has been handed down from one generation of teachers to another, Professor Braun had set himself to see what happened in aortic regurgitation, he would have found that the majority of such patients die of heart failure, and never show any of these signs affecting the lungs, liver, and right heart. Moreover, if he had carefully noted and appreciated all the symptoms in those who did show these signs, he would have found that other symptoms appeared, which revealed that there were other factors causing the signs of heart failure. This lack of appreciation of the signs associated with heart failure is seen in the manner in which the author deals with the subject of auricular fibrillation. He has failed to grasp the significance of the condition, missing not only the diseases which produce it, but its effect in altering the whole mechanism of the heart's action, in embarrassing the force which maintains the circulation, and in modifying the heart's reaction to drugs, especially those of the digitalis group.

He not only follows closely the conventional methods of describing heart failure, but adopts the usual rule-of-thumb methods of prescribing remedies. The article on digitalis does not bear the stamp of a practical acquaintance with the action of the drug acquired by the careful observation of its effect on different cases, so as to note the varied results and to correlate these results with the different forms of heart lesion. The opinions of many people are given with little discrimination. The result is that the reader, in place of getting a balanced judgement the result of the author's personal experience, gets a bewildering variety of opinions and methods with no suggestion as to their practical application. In fact, a lack of discrimination seems to run through the whole subject of treatment, so that for any particular affection a variety of drugs, baths, and methods are recommended; investigation has shown many of them to be of little or no use, but the reader finds no guidance as to which are the more serviceable. We encounter the familiar fallacy of treating symptoms as if they were diseases. Angina pectoris may arise from a variety of causes, and it is no more than common sense to determine that the treatment should be in accordance with the cause. But the author boldly gives a series of drugs which should be used, without any proper indication that discrimination is needed. Perhaps this tendency to take a symptom for a disease is best seen in the treatment of irregularities. Although the author describes the various irregularities, and seems to realize that irregularities are of varied significance and arise from a variety of causes, yet we find that the effects of heat and cold upon irregularities are described without any reference to the kind of irregularity, and with no appreciation of the fact that irregularities arise from different causes, and react differently to such stimuli as heat and cold.

Although we have felt bound to point out the faults which we believe to exist in the book, we recognize that, judged by the standard so often applied to books dealing with this department of clinical medicine, it would be counted as excellent, up to date, and worthy of praise. But if clinical medicine is ever to get out of its backward state, the habit of taking things for granted must be given up, and authors must be required to have accurately observed and tested their statements, and to give clearly the reasons for the faith that is in them.

[1] *Diagnose und Therapie der Herzkrankheiten.* Von Prof. Dr. L. Braun. Zweite, vollständig umgearbeitete Auflage. Berlin and Wien: Urban and Schwarzenberg. 1913. (Sup. roy. 8vo, pp. 373. Mk.12. Geb. Mk 14.)

A MANUAL OF TROPICAL MEDICINE.

The second edition of Castellani and Chalmers's *Manual of Tropical Medicine*[2] is a most comprehensive work. The book has grown, including index and list of authorities, from 1242 to 1747 pages, an increase of just over 500 pages. So quickly does tropical medicine move ahead that a new edition was necessary, and the growth in the number of pages gives a very good idea of the vast amount of work accomplished since the first edition saw the light. The same system has been adopted in the present as in the first edition. Part I is an introduction; Part II discusses the causation of disease in the tropics; Part III describes the diseases of the tropics, (*a*) fevers, (*b*) general diseases, (*c*) systemic diseases. In addition to the index, there is a list of authorities. Part II contains the zoological description of the protozoa and metazoa, malarial parasites, trypanosomes, helminths, insects of different kinds, especially those that bite—tsetse flies, mosquitos, tabanidae, fleas, ticks, etc.; and also of the vegetable parasites—the fungi. Bacteria are not dealt with, as otherwise the book would have become too unwieldy. This section—the parasitic causes of disease—contains over 500 pages. It is this knowledge of zoology that constitutes the difference between tropical and what may be termed "home medicine." In the former the student must have a first-hand acquaintance with the protozoa—a major part of his work lies in this realm—and also with helminthology and entomology, and, in addition, must know pathology, bacteriology, and general medicine just as the student at home. This means an enormous amount of extra study, a system of study now becoming so large that it is almost impossible to encompass it in one book. Castellani and Chalmers have done this, however, and the way in which they have broken up the matter under the headings described above is judicious. The student learns his zoology, the different species of parasites he will meet with, and then sees what diseases they cause and studies these in detail. Within the pages of the manual an enormous number of facts and observations are accurately recorded, and the position the authors hold in the world of tropical medicine guarantees that this

[2] *Manual of Tropical Medicine.* By Aldo Castellani, M.D. Florence, and A. J. Chalmers, M.D. Vict. and Liv., F.R.C.S. Eng., D.P.H. Camb. Second edition. University Series. London: Baillière, Tindall, and Cox. 1913. (Demy 8vo, pp. 1779; 15 plates, 630 figs. 21s. net.)

should be so. By their care, assiduous attention to detail, and solid hard work they have undoubtedly advanced their book to a first place in the literature of the subject, and the manual is now looked upon, and rightly so, as a standard work.

Such being the case, is there anything to criticize adversely in the pages? There are a few things but not, perhaps, many, of serious import. Most of what may be termed the faults—or, in plain English, mistakes of the first edition—have now disappeared, and further imperfections do not seem to have been added. There is one thing, however, that it is necessary to point out, and that is that in incorporating new work authors should be very careful to state whether or not it has been confirmed. As so many people at once jump to the conclusion that if anything appears in a standard textbook it must be true it is desirable to deal very clearly with this matter. The reputed life-history of the organism of syphilis (pp. 408–409) is a case in point. So far as is known, not only has this not so far been adequately confirmed, but many leading proto-zoologists do not accept it. The student reading the description in the book, however, will certainly not bear away such an impression.

Finally, what must be described as a serious blot in a work of such merit is the index. Quite possibly the writers of the book handed this over to some one else to do, but, if they did, then all that can be said of it is that the task has been very indifferently accomplished; this is marked also in the list of authorities. Readers will readily find these inaccuracies themselves, and to many they cause much irritation and dissatisfaction. Take, for example, the entry "Joseph Chamberlain." Under this distinguished statesman's name is included work on beriberi in the Philippine Islands—need we say manifestly a mistake.

However, though pointing out these minor inconsistencies, we have nothing but praise for the work as a whole, and especially for the fair way in which various workers' views on different subjects are noted. It is, as already said, a standard work on tropical medicine. Possibly, when the time comes for another edition, it may be well to make it into a system of tropical medicine, with several authors who would each write on his own special subject. Again, if the matter increases as rapidly as in the past, one volume will not contain it all, and for convenience in handling it will be well to issue the work in two volumes.

PSYCHO-ANALYSIS.

A GOOD deal has been heard lately, and a good deal more is likely to be heard in the near future, of psycho-analysis. It professes to apply to the study and treatment of the psycho-neuroses, one of the time-honoured methods of general clinical medicine—the study of the history of the individual patient from early youth. It proceeds upon a theory and follows a method which its exponents consider to be well and clearly defined. The elementary or basis hypothesis on which its theory and practice both rest is familiar to every one—that every event and state of feeling is recorded, and as it were filed away, in the brain in an orderly manner, so that it may be brought back into consciousness by a suitable stimulus. Often, perhaps usually, the mental process by which a past sensation is brought into the light of consciousness is too rapid to be analysed, as when a scent brings up a circumstance of childhood or youth. In other cases the process is slower and easily followed; we seem to work backward from one memory to another until we lay hold of that of which we are in search. The process may be compared to finding one's way by the recognition of landmarks, once familiar, along a path, crossed by many others, which we have not traversed for many years. On this analogy the psycho-analyst would be a companion with a theory of the direction in which the path will most probably lead.

The name best known in association with this method is that of Professor Freud of Vienna. He has written several books, some of which have been reviewed in these columns on their appearance, and many articles. He has many followers and collaborators, and a congress of psycho-analysts was held not long ago, but Professor Freud is so well recognized as the leader and inspirer that the theory and method are often spoken of as Freudism. It is probably more difficult to write clearly and concisely in German on a complicated subject than in some other languages; at any rate, Professor Freud has not overcome the difficulty, and his translator acknowledges that he has found it far from easy to make certain of the meaning of some passages. It would, perhaps, be a mistake to assume that the obscurities of his style are due to the usual cause, which is want of clearness of thought, but the difficulty exists, and the English-speaking world of medicine owes a debt of gratitude to Dr. BRILL for his translations of two of Freud's volumes, the one,[3] *Selected Papers on Hysteria and other Psycho-neuroses*, published as one of the Nervous and Mental Disease Monographs of the *Journal of Nervous and Mental Disease* (New York), and the other,[4] *The Interpretation of Dreams*, issued with a warning note by the publisher, in a separate volume. In the same series of monographs there is another volume, a translation by Dr. C. R. PAYNE of Hitschmann's book, which in its English dress has the title, *Freud's Theories of the Neuroses*. Taken together they will enable a student of the subject to form an independent judgement on the validity and value of the theory and method.

The method depends for its success upon the consent of the patient to allow his, or usually her, mind to work freely backward and to give the analyst the frank truth about each recovered memory. As Dr. Forsyth explains in the lecture published elsewhere in this issue, the psycho-neurotic sooner or later comes to a point about which she is unwilling to be frank, usually declaring it to be of no importance. This gives the psycho-analyst his cue and he becomes the chief actor in the comedy, for Freud's theory or discovery—his new psychology, as Dr. Brill might say—turns on this reticence. It is, he says, in its origin protective. An unbidden guest comes out of the darkness of the sub-conscious and knocks at the door of consciousness in the healthy and the psycho-neurotic alike. The healthy man either takes him in and satisfies his hunger, or, if a guest improper to be entertained, turns him out and slams the door in his face, with the injunction never to return. The psycho-neurotic does neither—he conceals his unbidden guest, but remains conscious of his presence, and the wretched thing will pop his head out or rattle his chains behind the arras. The psycho-neurotic may try to forget, and may in time succeed in forgetting, the intruder's existence, but the secret fear remains. When he is reminded of the truth he turns away from it, closes his mind to it, and tells the psycho-analyst that it is in truth only a rat and not a ghost. By perseverance the psycho-analyst drags the hidden thing into the light, and then, like a ghost at cockcrow, it vanishes, and the fear or obsession vanishes with it. Professor Freud and his disciples do not tell us why; it is an empirical observation, so that we must know that it has occurred in many instances and that the morbid condition has not recurred, before we can accept as proved this law of "the new psychology."

Dr. Forsyth gives a very striking instance of the cure—the cure, at any rate, for a time—of that very common fear, the dread of darkness. We believe that other psychologists, also new, but of a different school, trace it much further back, to a period when the remote ancestors of modern psycho-neurotics went in bodily fear of the spirits that walked in darkness, so that the fear of the dark is probably so deeply rooted in the human brain as to approach the instinctive. But, indeed, it is only within the last two centuries or so that even in the most settled civilization a man might walk through a town without a fear, well founded in reason and experience, of the material evils and corporeal dangers the darkness might contain for him.

There is another even older and more powerful and fundamental instinct, which mankind shares with nearly all living things, to which Freud and some others of his

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[3] *Selected Papers on Hysteria and other Psycho-neuroses.* By Professor S. Freud. Authorized translation by A. A. Brill. (Roy. 8vo. pp 223; 2.50 dols.) *Freud's Theories of the Neuroses.* By Dr. Eduard Hitschmann, of Vienna. Authorized translation by Dr. C. R. Payne. Nervous and Mental Disease Monograph Series. Nos. 4 and 17. (Roy. 8vo, pp. 164. 2.00 dols.) New York: The Journal of Nervous and Mental Disease Publishing Company. 1913.

[4] *The Interpretation of Dreams.* By Professor Dr. S. Freud. Third edition. Authorized translation by A. A. Brill. London: George Allen and Co., Limited. 1913. (Demy 8vo, pp. 522. 15s. net.)

school attach much importance in psycho-analysis—so much importance, indeed, that it seems for them to have overshadowed all others. Dr. Forsyth passes over this part of the subject very lightly, but it is in this direction that danger lies, and it ought not to be blinked.

The extravagances of some of the psycho-analysts are repudiated by Professor Freud, but he is himself ready to go a very long way, and some of his conclusions appear somewhat grotesque. Freud believes and teaches that sexual sensations become obtrusive at a very early age—in very earliest infancy, in fact—and some of the opinions to which this belief leads, as set out in the *Interpretation of Dreams*, and in Hitschmann's book, but especially in the former, will seem to many readers extravagant. They are, perhaps, harmless, but so much can hardly be said of the opinions also held by Professor Freud, if we understand him aright, as to hysteria and psycho-neuroses. In the etiology of hysteria the main factor for him is a suppressed or repressed state of consciousness having origin in one of the primary appetites—hunger or thirst or the sexual, but usually the last—and in that of a psycho-neurosis a suppressed memory, always sexual, and usually dating from childhood or infancy.

The patient, perhaps, or probably, a young woman, lies on a couch; the psycho-analyst sits beside her with his hand on her head and asks her to tell him frankly every thought and picture that passes through her mind. He times her responses, and when there is delay in response, assumes that there is something to hide, that there is a "protective" influence at work guarding against the emergence and acknowledgement of the real memory at the back of her mind. As he is imbued with the idea that she probably has some obsession of sexual origin, he is disposed to seek in that direction. Evidently the situation contains elements of danger for the professional reputation of the psycho-analyst, and it would not be prudent for him to neglect any of those precautions usually observed by members of the profession in the clinical examination of hysterical women. It contains also an element of danger for the patient, who as a result, it may be, of imperfect or incomplete analysis, may receive advice from her psycho-analytic physician repugnant to the ordinary code of morality. Professor Freud himself relates a case which illustrates the danger of the emphasis laid on the sexual factor. One of his disciples, inadequately instructed and insufficiently painstaking, allowed himself to be hurried into giving advice which seriously alarmed and deeply outraged his patient, who was saved by a prompt resort to the ministrations of Professor Freud himself.

We have said that the English-speaking profession is under a debt of gratitude to Dr. Brill for the translation of the two books mentioned. We do not wish to detract from that acknowledgement, but it must be said that the debt would have been greater had Dr. Brill, with the help of experts, seriously tackled the task of finding intelligible equivalents for some of Freud's terms, and had he not too often, perhaps in despair, descended to literal translation.

DOWELL'S INCOME-TAX LAWS.

THERE is no more complete guide to the intricacies of the law relating to the income tax than DOWELL'S book entitled, *The Acts relating to Income Tax*.[5] A seventh edition, revised, altered, and considerably enlarged by Mr. J. E. PIPER, has recently been issued. This publication is recognized as a work of the first authority on income-tax law, and is universally resorted to by accountants, solicitors, barristers, and others requiring information on the subject. In the hands of the present editor, who is an assistant solicitor to the Board of Inland Revenue, the scope of the work has been considerably enlarged, and its utility much extended. In spite of its semi-official character there is no trace of officialism in the very clear and impartial way in which the questions dealt with are discussed.

All the Acts relating to the income tax are given in full, and a concise statement of the points raised in every case of any importance that has been decided by the courts is given, with, frequently, a verbatim extract of the material portion of the judgement. The decided cases follow the various sections of the Acts that deal with the principal point raised in the case, and the editor has been lavish in repeated references to the leading cases whenever any aspect of the provisions of the Acts has been elucidated in the courts.

In addition to the ample information as to the judicial decisions, each main section of the Acts is prefaced by pertinent remarks in the way of general explanation, a feature especially useful to the non-expert searcher after information as to the general effect of the income-tax laws, who is, moreover, assisted by a very complete index of sixty-two pages. There are, in addition, accounts of the history and of the machinery of the assessment and collection of the tax, and much information of a general character bearing on the rules of construction followed in interpreting the Acts.

The opportunity afforded by a review of this work may be taken to remind our readers of some aspects of the income-tax law and administration that are sometimes overlooked. There is, for example, the rule that a successor is liable to be charged on the basis of the average profits of his predecessor, with the important proviso that if the successor finds that his profits are less, he can claim to have the assessment adjusted to the amount of his own profits; this applies not only when there is a complete succession, but also where there is any change in a partnership and the profits of the practice are found to have been reduced in consequence of the change. Moreover, where a medical man gives up his practice without disposing of it, he is entitled to have the assessments of the last three years reviewed, and if they have been in excess of the actual profits of those years to obtain repayment of the income tax on the balance. Again, the cost of a new motor car is a proper allowance as an expense to be set against the profits so far as the outlay represents the cost of replacing another car.

There is one concession to practitioners in general practice who also hold public appointments that does not appear, so far as we know, in any of the publications dealing with the income tax—namely, that they are allowed the option of treating the salary and fees received from such offices as though the sums were part of the receipts of the general practice. The effect of this concession is that no separate income-tax return need be made under Schedule E for the profits of the office, but only one general return under Schedule D, to include the profits derived from appointments on the average of the three preceding years. In addition to the convenience of making a single return, there is the added advantage that it is not necessary to make a separate calculation of the expenses relating to each appointment, and the consequent complication in the practitioner's accounts is thus avoided.

[5] *The Acts relating to Income Tax.* By the late Stephen Dowell, M.A. Seventh edition; revised, altered, and considerably enlarged by J. E. Piper, LL.B.Lond. London: Butterworth and Co. 1913. (Demy 8vo, pp. 940. 22s. 6d. net.)

NOTES ON BOOKS.

THE twenty-second issue of *The Annual Charities Register and Digest*[6] is edited, as usual, by Mr. C. S. LOCH, and equally, as usual, contains sufficient information to fill five or six ordinary works on the subject of philanthropic enterprise. The section dealing with individual institutions occupies about half the volume, and classifies them according to the special object which they have in view, an adequate account of all those working in London or available by its inhabitants being included. The term "charity," it should be noted, is liberally interpreted, almost any enterprise which is benevolent in its character and whose function it is to help to prevent financial or other distress being taken to be included within its scope. The rest of the volume is occupied by a review of the work of the year, by articles by well-known authorities on the various special forms of charity for physical and mental defects, and by an introduction. The section which modestly bears the latter title is in effect a carefully documented essay of some 250 closely printed pages on the subject of philanthropic work as a whole and the legal conditions attaching to its performance. A final feature of this reference book, which is not only highly useful but a monument of industry, is an index containing, we calculate, upwards of 8,000 references.

[6] *The Annual Charities Register and Digest.* Twenty-second edition. By C. S. Loch. London: Longmans, Green, and Co. 1913. (Post 8vo, pp. 1052. 5s. net.)

Sir RICKMAN GODLEE has published in a volume his Hunterian Oration[7] before the Royal College of Surgeons of England last February, and has added a number of interesting illustrations. The frontispiece is a portrait of John Hunter from a drawing by Sir Nathaniel Holland in 1793, and reproductions of Sharp's engravings after the portrait of Reynolds and of the death mask of Hunter are also given. There are a series of portraits of the conservators of the museum, William Clift, Sir Richard Owen, Quekett, Sir William Flower, Professor Charles Stewart, and of the present distinguished conservator, Dr. Arthur Keith. Other illustrations include a view of Leicester Fields from a print of 1753, a drawing of Hunter's house at Earl's Court and of the copper for macerating bones, and a drawing of the museum in 1800 which seems to prove that there was then a large amount of vacant space.

MEDICINAL AND DIETETIC PREPARATIONS.

A New Quinine Derivative.

WE have received from the English agents, Messrs. Widenmann, Broicher and Co. (1, Fenchurch Avenue, London, E.C.), a sample of hydrochloride of hydroquinine, recently placed on the market by Messrs. Zimmer and Co., Frankfort-a-M. This compound has the formula $C_{20}H_{26}N_2O_2.HCl.2H_2O$; the base thus differs from quinine by containing two additional atoms of hydrogen. Hydroquinine has long been known as an alkaloid occurring to a small extent with quinine in cinchona bark, and its physiological action has been regarded as similar to that of quinine. It is now, however, being prepared synthetically from quinine, and is therefore available in any required quantity. The hydrochloride, which is a white powder of very bitter taste, not only has the advantage of very great solubility (1 part dissolving in about 0.5 part of water, against 34 parts required for quinine hydrochloride), but according to the statements supplied its effect in destroying the parasitic protozoa is considerably greater than that of the quinine salt. The high solubility makes it a very convenient salt for hypodermic administration, and it appears likely, therefore, to be very largely used in malaria and similar cases.

Emetine.

The very striking success with which emetine has been administered hypodermically in amoebic dysentery has naturally led to a large demand for its salts in forms suitable for hypodermic use. Messrs. Burroughs, Wellcome and Co. (Snow Hill, London, E.C.) have submitted samples of their preparations of this drug, which comprise tabloid hypodermic emetine hydrochloride $\frac{1}{3}$ grain and $\frac{1}{2}$ grain, and vaporole emetine hydrochloride, the same doses being contained in 1 c.cm. of solution, sterilized and hermetically sealed. In order to enable the emetine to be given orally also the same firm has introduced tabloid emetine hydrochloride $\frac{1}{2}$ grain, keratin-coated. Administration by the mouth, if the drug is protected from the action of the gastric juice by the keratin coating, has obvious advantages, as the patient can take the prescribed dose with ease. Sir Pardey Lukis, in the address on dysentery published in the JOURNAL on June 28th, referred to the fact that Leonard Rogers had administered the drug by the mouth with good effect, though its action was less rapid than when given hypodermically, and in the same issue Dr. G. C. Low recorded a case (p. 1369) which well illustrates both the convenience and the efficacy of the method.

Melubrin.

Additions to the already large number of synthetically prepared antipyretics and analgesics are continually being made; one of the latest has been submitted to us by Messrs. Meister, Lucius, and Brüning, Limited (3, Jewry Street, London, E.C.), who have put it on the market with the name "melubrin." Its chemical name is phenyl-dimethyl-pyrazolone-amidomethane-sulphonate of sodium, from which it is seen that it is a derivative of antipyrin. It is claimed that it can replace salicylic acid in articular and muscular rheumatism, influenza, and other cases, while it is said to possess the advantages of being without effect on the digestion or the circulation, and practically free from any toxicity. The sample submitted was in the form of tablets of 0.5 gram (7½ grains) each; examination showed it to be easily soluble in water and practically tasteless—both points in its favour. If experience shows its therapeutic activity to be equal to what is claimed for it, it may prove to be a valuable addition to medicine.

Digipuratum.

We have previously drawn attention to the purified extract of digitalis which Messrs. Knoll and Co. (8, Harp Lane, London, E.C.) supply under the name "digipuratum" in powder and tablets. It is described as a mixture of the active glucosides or gluco-tannoids of digitalis, after removal of digitonin and other substances allied to the saponins and inert matter; the product is stated to be physiologically standardized. The same firm has now submitted a sterilized solution of digipuratum which is supplied in ampoules each containing 1 c.cm., equivalent to 1½ grains of digitalis leaf; this is intended for subcutaneous, intramuscular, or intravenous injection, for which it appears to be suitable.

Bismosal.

Bismosal is the name given by Messrs. J. C. Arnfield and Sons, Ltd. (Stockport), to a mixture which they prepare containing bismuth and salol; the distinctive feature of this mixture, a sample of which we have examined, is that the bismuth is present in the form of hydroxide, and remains permanently suspended. The value of bismuth and salol in various disorders of the alimentary canal is well recognized, and the preparation appears likely to be useful.

Byno-lecithin.

We have received from Messrs. Allen and Hanburys, Limited (Bethnal Green, London, E.), a sample of byno-lecithin, which is a combination of their liquid extract of malt, bynin, with the alkaloids of cinchona and nux vomica, and lecithin. Our analysis showed the amount of the latter to be 1 per cent., or about 4½ grains in an ounce. Lecithin seems often to be more easily assimilated than other forms of phosphorus, and when presented in combination with tonics and readily assimilable carbohydrates, as here, it may prove a useful adjuvant to the dietetic treatment of nervous exhaustion.

ROYAL MEDICAL BENEVOLENT FUND.

AT the June meeting of the Committee eighteen cases were considered, and grants amounting to £120 voted to twelve of the applicants. Appended is an abstract of the cases relieved:

1. Widow, aged 55, of M.R.C.S., L.R.C.P. Has supported herself since husband's death nearly twenty-five years ago, but at present is out of work and is going into a hospital for an operation. Voted £2, and case to be reconsidered after leaving the hospital.

2. Widow, aged 83, of L.S.A. Has an annuity of £30 and a small allowance from a nephew, but is a confirmed invalid both physically and mentally, and requires help for unavoidable expenses. Voted £5.

3. Daughter, aged 49, of M.R.C.S. No income, and suffers from a chronic complaint which makes occupation impossible. Is practically dependent on this fund and a sister who can only earn a few shillings a week. Voted £12.

4. Wife, aged 38, of M.R.C.S., L.R.C.P. Husband used to have a fair practice in London, but broke down in health three years ago, and is now abroad incapacitated and unable to help. No income; slight help from a brother-in-law and takes a boarder. Five children, aged 13 to 5. Voted £10.

5. Widow, aged 32, of M.R.C.S., L.R.C.P. No income, but, having been trained as a mental nurse, has taken a small house and hopes to obtain resident patients. One son, aged 6. Voted £10.

6. Daughters, aged 42 and 40, of late M.R.C.S. Ten years ago started a lodging-house at a seaside place, and having had two successive bad seasons are unavoidably in difficulties, which they hope will be temporary. Voted £10.

7. Widow, aged 48, of L.S.A. No income; is being given lessons in dressmaking by the Guild and hopes to obtain boarders. Four children, aged 19 to 9. Relieved once, £10. Voted £12.

8. Widow, aged 54, of M.R.C.S. Income very small and is obliged to live at Margate with an invalid daughter who for more than three years has had to use a spinal carriage. Relieved twice, £10. Voted £5.

9. Widow, aged 55, of L.R.C.P.Edin. No income; no children; health too feeble for regular occupation. Relieved twice, £20. Voted £12.

10. Widow, aged 46, of L.R.C.P., L.R.C.S.Edin. No income and suffering from an incurable complaint. Relieved once, £20. Voted £18.

11. Daughter, aged 68, of late M.R.C.S. Only income about £12 a year and is confined to bed by a grave spinal disease. Relieved twice, £24. Voted £12.

12. Widow, aged 65, of M.R.C.S. Practically dependent on letting lodgings and is not in good health. Relieved eight times, £94. Voted £12.

Contributions may be sent to the Honorary Treasurer, Dr. Samuel West, 15, Wimpole Street, London, W.

[7] *The Hunterian Oration.* By Sir Rickman J. Godlee, Bart., P.R.C.S., B.A., M.S., M.D.Dub. London: J. Bale, Sons and Danielsson. 1913. (Demy 8vo, pp. 45; illustrations 13. 2s. 6d. net.)

Nova et Vetera.

SOME FIGURES IN MEDICAL HISTORY.

SANCTORIUS.

Santorio Santorio, or, in the Latinized form that was customary in his day, Sanctorius, though now only a name to students of physiology, must be counted among the great innovators in medicine. He founded no system, and appears to have thought that he was only giving more precision to the old Galenic theories by applying methods of exact measurement to the human body. Of his life very little is known, and it may be surmised that it was uneventful; indeed he must have spent a considerable part of it in the weighing chair which is here represented. He was born at Capo d'Istria in the territory of the Venetian Republic in 1561, studied medicine at Padua, where in due course he took his doctor's degree. After travelling in Poland, Croatia, and Hungary he returned to Italy, and after practising his profession at Venice for some years he was appointed professor of medicine at Padua in 1611. He won great fame as a teacher, and attracted students in large numbers to his lectures by the originality of his thought. In 1624 the Republic of Venice invited him to return to that city to practise. So highly were his services valued that although he had left the university the State continued to pay his salary till his death, which occurred at Venice in 1636 in the 75th year of his age.

At Padua he came under the influence of Galileo, and this doubtless led him to the application of instruments of precision in medicine. The work by which the name of Sanctorius still survives in medical history is his *Medicina Statica*, or medical statics, which was published at Venice in 1614. It passed through many editions and was translated into several languages. There are at least two English versions: One originally printed at London in 1676 under the title *Rules of Health*, and described as "Englished by J. D."; the other, with a commentary, by John Quincy, the third edition of which was printed in London in 1723. Quincy, speaking of the previous English version, says, rightly enough:

> The Translator has retained so many Terms and Latin Phrases, that the Original I should think as easie to an Englishman as the other, had it not gone off so much that at this time it is hardly to be met with.

The Latin text was issued with a commentary by Dr. Martin Lister (London, 1701). Of Lister's edition, Quincy somewhat unkindly says:

> Dr. Lister has also given an Edition in Latin, with his Notes upon each Aphorism; but hardly with any other advantage to the World than making Sanctorius, who was before scarce, more common to be met with. Indeed I cannot make any large acknowledgement for his Assistances in what I have done, although I hardly omitted consulting him upon every aphorism, for in most I found my author more intelligible than his commentator.

Lister, in his preface, says no discovery, except that of the circulation of the blood [which came later], can be compared with that of the insensible perspiration by Sanctorius. The book is dedicated to Nicolaus Contrarenus, Senator of Venice and Moderator of the University of Padua. In it Sanctorius acknowledges the encouragement given him by Contrarenus during nearly forty years, and begs his aid as a defender against "the froward crowd of Zoiluses." The book consists of eight sections of aphorisms, the reason for the selection of this form being that he wished to imitate Hippocrates, "our great dictator," whose steps he had always thought it an honour to follow.

In the *Medicina Statica* Sanctorius gives the results of experiments on the variations in the weight of his own body prolonged over thirty years. He seated himself in a specially constructed balance. The figures of this differ somewhat in slight details in various editions and translations; the one reproduced here is given in Martin Lister's edition. Essentially it was a chair suspended to a steelyard. The beam, he says, was fastened to the rafters "at a secret place in a room above that where you take refection, because it would be unsightly in the same room; as also by reason of the unlearned to whom all things that are unusual seem ridiculous. Now the chair being a finger's breadth from the floor stands firm so that it cannot easily be shaken." In the introduction to his book Sanctorius says:*

> It is a thing new, and not before heard of in medicine, that any one should be able to find out the exact weight of insensible perspiration, nor has any one of the philosophers or physicians attempted the doing of any thing in that part of the medical faculty. I am the first that has essayed it, and (if I am not mistaken) brought the art to perfection, by reason and the experience of thirty years.

After weighing the food and drink which he required for twenty-four hours, Sanctorius compared the total

*In the quotations from Sanctorius made in this article we use the translation by "J. D." (London, 1676).

weight with that of the faeces and urine excreted during the same period. From this he calculated the amount of waste lost by insensible perspiration. He discriminated carefully between insensible perspiration and sweat. He held that the weighing chair indicated exactly the daily insensible perspiration; "which perspiration," he says, "not well considered, medicine for the most part proves vain and ineffectual; for all indispositions almost are the productions of a lesser or larger perspiration than is requisite." A person seated in the chair can see when he has taken the right proportion of meat and drink, "beyond which or short of which we are prejudiced."

Then the remote part of the beam is a little elevated, and the chair withal immediately descends a little. The descent of the chair tells the person sitting in it that he has taken the requisite amount of his refection.

The aphorisms are grouped under the following headings: (1) Of the ponderation of insensible perspiration; (2) of air and waters; (3) of meat and drink; (4) of sleep and vigilance; (5) of exercise and rest; (6) of venery; (7) of the affections of the mind; (8) answer to the "staticomastix" [evidently a critic who remains for us anonymous]. It is impossible within the limits of space at our disposal to give anything like a complete analysis of the laborious observations of Sanctorius. Moreover, this would be superfluous at the present day, because, as he reckoned only the outgoings—and some of these very imperfectly—taking no account of the partial compensation caused by the interchange of gases in the skin, the results cannot be accepted as accurate. In estimating his value it is the method of exact measurement that forms his distinctive merit. Michael Foster* says that Sanctorius "stands out as the forerunner in the early years of the seventeenth century of that statical method of physiological inquiry which during the latter half of the nineteenth century produced such useful results." Sanctorius cared more for practical guidance than for theoretical conclusions. His doctrine as to perspiration was grossly misunderstood by many physicians in the seventeenth and eighteenth centuries, and was made the basis for the inordinate sweating which was used in the treatment of many diseases. He regarded his balance as a means of helping a man to live by rule in the matter of diet. But he went far beyond this, for apparently he weighed himself before and after sleep, after exercise—walking, riding, driving—after sexual excitement, after study, and so forth. He even attempted to weigh the emotions, such as anger and gladness, that are generally regarded as imponderables. In fact, he illustrated the almost inevitable tendency of a man to push a new idea beyond reasonable bounds. He clearly foresaw that he would encounter opposition and misunderstanding, and he warns the reader that human nature, not only among the vulgar but also among the learned, "not conducted by a love of the truth, but hurried away by ambition or the vain letchery of contradiction or pure envy, will rise up against this new art and will heavily inveigh against it though they are not so much as acquainted with the very name of it."

The main outlines of his doctrine have already been indicated. A few points of his teaching may be briefly mentioned, with some of his aphorisms as specimens of his style. He says that the insensible perspiration alone commonly exceeds all the sensible perspirations taken together. If the meat and drink consumed in one day weigh 8 lb., the insensible transpiration ordinarily amounts to 5 or thereabouts. The quantity varies somewhat according to diversity of nature, climate, seasons, age, diseases, food, and other circumstances. That weight which to any one is such as that when he goes up some steepy place he feels himself lighter than he is wont, is the exact standard of good health. There are two kinds of insensible transpiration—one immediately after sleep, upon the completion of the concoction, and after this there is an increase of strength; the other, in the waking state, is occasioned by crude humours and causes impairment of strength.

That perspiration which eases the body of a great, and that an unprofitable, burthen is not that which is attended with sweating, but that invisible perspiration or breathing, such as that which in the space of four and twenty hours in winter may exhale 50 ounces or more. Invisible perspiration becomes visible either when there is an excess of nutriment or when there is a remission of heat, or by reason of violent motion. . . . If, by ponderation, thou shalt find that the matter of usual perspiration is retained in the body, and that the party does neither sweat nor urine for some days after, infer thence that the retained matter prognosticates future corruption. . . . The secret and insensible perspiration eases us more than all the sensible ones put together; for, after sleep, before there be any evacuation of the sensible excrements, every one feels lighter, because he is really become lighter by three pound or thereabouts. In the space of one night there are commonly evacuated, of urine sixteen ounces more or less; of concocted excrements by stool four ounces; and by occult perspiration forty and above. There are many, who, in the space of four and twenty hours evacuate as much, by insensible perspiration, as they do by stool in the space of fifteen days.

One wonders how Sanctorius discovered the dogmatic statement contained in the last sentence.

He held strongly that health stands in a constant relation to the amount of the insensible perspiration. This may be diminished by the greater abundance of the excretion by the bowel and the bladder, and most diseases arise from this cause. The secret of long life is revealed in the following propositions:

Observe in the morning, after a somewhat plentiful supper over night, that sort of greater perspiration which may be completed in thyself in the space of twelve hours; grant it to have amounted to fifty ounces. Some other morning after having fasted over night yet with this proviso that thou didst not exceed at thy dinner the day before, make the same observation; let us admit the perspiration to have amounted to twenty ounces: this foreknown pitch, upon that moderate proportion of meat and other non-natural causes, which will be likely to reduce thee daily to the mean between fifty and twenty ounces; and that mean will be thirty-five ounces. Thus mayst thou live a long and healthful life, nay haply arrive to that of a hundred years.

On the question of alteration of weight Sanctorius is quite sound. He says:

The health of that body is more firm and of longer continuance, whose weight in the process of many years is neither augmented nor diminished, than that of a body whose weight is altered every year. . . . It is an ill sign when a healthy person becomes of less weight than usual, it being supposed his course of life be the same as before.

He says elsewhere:

There would be uninterrupted healthfulness, even to the extremity of age, if men's bodies were kept in an equal weight during the four seasons of the year.

If the weight of the body be augmented in the space of five or six days, it is not to be taken off of a sudden, but by degrees; for abstinence from food, if it be extraordinary, hurts the stomach, the brain, and the heart, and, after a while, the whole body. But he attributes some remarkable properties to the perspiration:

The perspirable matter consists of two parts, to wit, a light, and a ponderous. The ponderous part is so exuberant that living creatures are generated of it, as punaizes [bugs] lice and the like. From the more ponderous part of perspiration do proceed the contagious infections of such as lie together: for the light part vanishes, but the more ponderous, being adhesive, does infect.

Lice are generated, he says elsewhere, because the perspiration of the malignant ichor, or thin matter, is obstructed.

In these days, when there is so much talk of the secret of old age, some hints from Sanctorius may not be inappropriate:

Old men prolong their lives by frequent spittings; for these being retained within the body as being incapable of coction or digestion, hinder perspiration; the consequences thereof are suffocation and death. . . . Old men reach not decrepid age by reason of the weakness of their expulsive faculties. Thence it comes to pass, that when they drink more than it was requisite they should, they urine less and perspire less than they were wont. The remedy is that the subtraction be equivalent to the addition.

He had views on ventilation much in advance of those of his contemporaries:

Nothing is more apt to take away putrefaction, than for one to use much ventilation, not only that which is procured by what is drawn in, but also by what is evacuated through the insensible passages.

But he had not the true light on the subject of open air, for he says:

That air which is over cool, moist, or windy, obstructs perspiration: whence it happens, that such as keep within

* *Lectures on the History of Physiology during the Sixteenth, Seventeenth, and Eighteenth Centuries.* Cambridge, 1901, p. 146.

doors, as, for example, women, are not troubled with coughs, catarrhs, or inflammations of the lungs.

On diet he has some notions as to which we must leave the reader to form his own judgement:

The use of swine's flesh and mushrooms is hurtful, as well because these do not perspire, as because they suffer not other meats eaten with them to perspire. Upon the eating of swine's flesh and mushrooms the body commonly perspires less than it is wont by a third part of a pound. Melons perspire so little, that they abate about a fourth part of the usual perspiration. That retention of the perspiration caused by melons is evacuated by urine or sweating. Grapes and green figs perspire but little, and somewhat hinder the perspiration of other meats; haply because they are sensibly evacuated. That kind of food does perspire best of all, and conveniently nourishes, whose weight is not felt in the belly.

Bodies are with less trouble reduced to their usual weight, if men take four pounds (*sic*) of meat at dinner, and four at supper, observing a convenient interval, than if they take six at dinner and two at supper.

The body is made more ponderous by four ounces of meat that is of much nutriment, such as pork, eels, and all fat things, than by six ounces of meat that is of little nourishment, such as are small fishes, chickens, small birds, and the like.

But his practical teaching is sound enough:

If thou canst but find out every day what quantity of meat is convenient for thee, thou wilt know how to preserve thy vigour and life a long time. . . . That quantity of meat is to be received into the body which nature is able to concoct, digest, and perspire.

He adds:

You will find what quantity of meat you should eat, if for several days together you observe that the body after sleep is without any trouble reduced to the same weight.

He condemns intemperance in drink:

In these our days, drinking, even in temperate persons, is disproportionate: for men eat commonly after the rate of twelve ounces, but drink after that of forty, and above. . . .

Then it is the proper time to take refection, when the body shall be reduced to that weight, yet healthful, which it was of a little before the party had eaten the day before. And this only Apollo himself shall find out without the balance.

But if the unusual weight of the overnight's drinking be not taken off, either by the strength of the concoctive faculty, or by corruption the next day, take the advice of these two verses:

Si nocturna tibi noceat potatio vini,
Hoc tu manè bibas iterum, & fuerit medicina.

This seems to be a scientific version of the familiar advice of the toper, "Take a hair of the dog that has bitten you."

Sanctorius knew the evil influence of mental disturbance on digestion, for he says:

He who goes to supper with a disturbed mind, digests much less than another, who is undisturbed and cheerful.

The relations between sleep and perspiration are set forth in the following aphorisms:

Undisturbed sleep is so great a promoter of perspiration that, in the space of seven hours, fifty ounces of the concocted perspirable matter do commonly exhale out of strong bodies.

A man sleeping the space of seven hours is wont, insensibly, healthfully, and without violence, to perspire twice as much as one awake. . . .

Short sleeping proceeds from the acrimony of the perspirable matter, which is not evacuated; but the retention of the perspirable matter is commonly occasioned by nature's being more than usually employed about some other internal functions.

The acrimony of the perspirable matter which is retained, very often ascends up to the head, disturbs sleep, and diverts the perspiration of the superior parts. . . . A person sleeping perspires twice as much as one waking. Thence came that remarkable saying, two hours of rest in a person awake are but equivalent to one of sleep. . . .

Sleep about four hours after meat is best; for then nature is least employed about the first concoction, it better recruits what was lost, and more promotes perspiration. . . .

There is no cause does more frequently interrupt sleep than the corruption of a man's meat. This is caused by the sympathy there is between the stomach and the brain.

Of exercise he says:

There are two kinds of exercises, one of the body, the other of the mind: that of the body evacuates the sensible excrements; that of the mind the insensible rather, and especially those of the heart and brain, where the mind is seated.

Violent exercise of mind and body renders bodies of lighter weight, hastens old age, and threatens untimely death. Of physical exercises he gives the preference to walking; he has something to say of dancing, which may be commended to the attention of the controversialists who have recently been discussing the acrobatic displays now fashionable among the "smart set."

Moderate dancing, without any capering or jumping, comes near the commendation of moderate walking; for it moderately expels the concocted perspirable matter.

The physical effects of the emotions are dealt with in the following aphorisms:

Amongst the affections of the mind, anger and alacrity render men's bodies lighter, fear and sadness more ponderous; and the rest of the affections operate answerably to their participation of these.

In grief and fear that which is lighter perspires, but what is more ponderous is left behind; in gladness and anger there is perspiration of both.

Hence it comes to pass that such as are subject to fear and grief are apt to be troubled with obstructions, hardness of the parts, and hypochondriacal affections. . . .

Nothing contributes more to freedom of respiration than satisfaction and consolation of mind. . . .

They who carry grief along with them to their beds perspire so much the less that night; and the next day their bodies continue more than usually ponderous. . . .

Fear and grief, as we find by statical experiments, are taken off by the evacuation of the gross perspirable excrements; anger and alacrity by that of the tenuious.

Too much gladness was considered to have a bad effect:

A continual gladness for many days together hinders sleep, and renders a man weaker.

Vegetarians will approve of the following aphorism:

Parsley, and other aliments that are opening, induce joy: pulse, fat meat, and other things which incrassate, and presently fill the cavities of the passages, cause grief.

Sanctorius, as may be gathered from the specimen of his aphorisms we have quoted, only gives his conclusions without details of his experiments. His tone is oracular, and he not seldom has something of the obscurity of oracles. Sometimes indeed a frivolous reader—if any such should have patience to read him—will be reminded of a passage in Ferdinando and Elvira in the *Bab Ballads* where an anxious inquirer is said to have received the following answer from the author of *Proverbial Philosophy*:

"A fool is bent upon a twig, but wise men dread a bandit."
Which of course was very clever; but I didn't understand it.

But he cannot be denied the glory which he claims of having opened up a new path in medical science, though Payne, in his masterly sketch of the history of medicine in the *Encyclopaedia Britannica*, does not think his name worthy of mention. His contemporaries saw in him a second Hippocrates, and set up a marble statue in his honour. Baglivi as well as Martin Lister places his discovery on the same level as that of the circulation of the blood. Boerhaave, in his *Methodus Studii Medici*, says after mentioning Galen:

Neither must we ever lose sight of Sanctorius's *Medical Statics*. If I speak my thoughts freely, none of the physicians who wrote before him treated the subject with so much accuracy, for he instructs us how nourishment is assimilated by the powers of the human body and what kinds of food admit of that degree of subtilty that they may exhale without dregs, and also what kinds of food suit a weak constitution and what a strong, and indeed there is no book upon medicine written with the same degree of perfection.

He speaks of the insensible perspiration as *Sanctoriana Perspiratio*. Hallé, in his *Treatise on Health*, published in the *Encyclopédie Méthodique* (Art. Médecine, t. 7), says that the work of Hippocrates marks the first epoch of hygiene, and that of Sanctorius the second, and he says that at a time when "the wisest physicians were those who scrupulously traced the footsteps of the ancient Greeks, who confined themselves to the study of their works, and were occupied in confirming the precepts of their masters by new observations, he alone had the courage to extend the range of his inquiries which they seemed to have circumscribed, who opened up for himself a new path and pointed out to his successors a method hitherto unknown of penetrating the secrets of nature."

It is only fair to recall the fact that Nicolaus Cusanus anticipated him to some extent in the application of statical experiments to medicine. He wrote a treatise on the advantages that physicians might derive from the application of such experiments to the human body with the object of ascertaining the proportions of sensible and insensible evacuations.

But when every deduction is made, it is unquestionable that Sanctorius has left his footprints on the sands of time as one of the great pioneers of science. He was not a man of one idea. He had a singularly inventive mind. Besides the work which has been dealt with, he was the author of *Methodus errorum vitandorum qui in arte medica contingunt*, Venetiis, 1603; *Commentaria in primam sectionem aphorismorum Hippocrates*, Venetiis, 1629; *Commentarius in primum fen primi libri Canonis Avicennae*, Venetiis, 1626; *De remediorum inventione*, Venetiis, 1629. He was the first who applied the thermometer to the human body to ascertain the degree of fever. The instrument he employed for the purpose was an adaptation of that invented by Galileo; he demonstrated it to his pupils thirteen years before he published—or rather buried—a description of it in his commentary on Avicenna (1626). He invented an instrument for the measurement of the pulse-rate, and he enumerated no fewer than one hundred and thirty-three variations of its beat. Another of his inventions was an instrument to demonstrate the rising of the sap in the vessels of plants.

He also devised a trocar and cannula "by which an opening may be rapidly made in the windpipe when suffocation is imminent, especially in infants," and which may also be used for tapping the abdomen in dropsy. A vessel resembling a bronchitis kettle for distributing steam, narcotic vapours, and cooling odours in the sick room; and, finally, cupping glasses fitted with exhausting syringes, described and figured at least twenty years before Guericke is supposed to have invented the air pump.*

It is truly wonderful that a man should have accomplished so much when physical science was yet in its infancy. The work he did is all the more remarkable when it is remembered that his concept of disease was that of Hippocrates and especially Galen.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE (LONDON, 1913).

SECTION OF TROPICAL MEDICINE AND HYGIENE.

THE Section of Tropical Medicine and Hygiene, of which the President is Surgeon-General Sir David Bruce, is holding discussions as follows:

Thursday, August 7th.—Plague. Reporters: Professor Dr. S. Kitasato, Tokyo; Major W. Glen Liston I.M.S. Dr. Simond has promised to take part in the discussion.

Friday, August 8th.—Beri-beri. Professor Dr. C. Eijkmann, Utrecht; Professor Dr. B. Nocht, Hamburg; Professor Schaumann, and Mr. Funk will take part in the discussion.

Saturday, August 9th.—Sanitary Organization in the Tropics (jointly with the Section of Naval and Military Medicine). Colonel P. Hehir, I.M.S., Stabsarzt; Dr. Hintze, Berlin; Professor Sir Ronald Ross, K.C.B.; Colonel King, I.M.S.; Professor Plehn, Professor W. J. Simpson, and Dr. Edm. Sergent will take part.

Monday, August 11th.—Leishmaniasis. Professor A. Laveran, Paris; Dr. Nattan-Larrier, Paris; Dr. C. Nicolle, Tunis; Sir William Leishman, will take part in the discussion.

Tuesday, August 12th.—Relapsing Fevers. Dr. C. Levaditi, Paris; Professor F. G. Novy, U.S.A. A part will be taken in the discussion by Dr. A. Balfour and Dr. Darling.

Papers have been received on the prevention of malaria in troops in India and on ulcerated and spongy gums in Indian troops, both by Colonel Hehir. The following papers have been promised: Dr. Castellani, Yaws; Captain Craig, U.S.A., Dengue; Dr. Robert Doerr, Vienna, Phlebotomus Fever; Professor Katsurada, Japan, Schistosomiasis; Dr. van Loghem, Utrecht: (1) On the Yellow Fever Danger for Asia after the Opening of the Panama Canal; (2) The Difference between Vibrio Cholera and Vibrio el Tor; Dr. Stephens, Liverpool, Blackwater Fever; Professor Th. von Wasielewski, "Zur Kenntnis der Halteridienkrankheit der Vögel; mit Demonstration."

The Section will meet in the Physical Chemistry Theatre on the ground floor of the Imperial College of Science. An epidiascope will be available for demonstration at the sittings. The sectional entertainments will include visits to the London Tropical School and probably to the Liverpool Tropical School. A dinner will be held.

The Secretary is Dr. A. G. Bagshawe, Imperial Institute, London.

* Withington, *Medical History from the Earliest Times* (London, 1894), p. 315.

SECTION OF PSYCHIATRY.

The meetings of this Section are to be held in the Chemical Library of the Imperial College of Science and Technology, South Kensington.

The President of the Section is Sir James Crichton-Browne, and the Acting Secretary Dr. Maurice Craig (54, Welbeck Street, W.).

The following are the discussions arranged and the names of reporters.

Thursday, August 7th.—The Psychiatric Clinic, its Aims (Educative and Therapeutic), and the Results Obtained in respect to Promotion of Recovery. Reporters: Dr. Adolf Meyer, Baltimore, U.S.A.; Professor Dr. Sommer, Giessen.

Friday, August 8th.—Psycho-Analysis. Reporters: Professor P. Janet, Paris; Dr. Karl Jung, Küsnach-Zürich.

Saturday, August 9th.—The Psychoses of Infection and Auto-intoxication. Reporter: Ghr. Professor Dr. K. Bonhöffer, Breslau.

Monday, August 11th.—The Syphilitic and the Para-syphilitic Insanities. Reporters: Professor Dr. W. v. Bechterew, St. Petersburg; Dr. A. Marie, Villejuif.

Tuesday, August 12th.—The Psychology of Crime (jointly with Section XIX). Reporters: Professor Comm E. Morselli, Genoa; Professor W. Weygandt, Friedrichsberg, Hamburg.

The afternoon meeting on Saturday, August 9th, will be held at Claybury Asylum, when a pathological demonstration will be given by Dr. Mott, and Dr. Robert Jones will show members of the Congress round Claybury Asylum.

Dr. E. Goodall, of the Mental Hospital, Cardiff, has undertaken the arrangements of the museum specimens for this Section, and is working with Mr. Armit, who is responsible for the management of the general museum of the Congress. Arrangements have been made for showing the plans of several of the London County Asylums. Facilities will be given for members to visit Bethlem Royal Hospital, the London County Council Asylums, Darenth Colony for mentally inflicted persons, and Holloway Sanatorium, Virginia Water.

Entertainments.

A garden party has been arranged, by the kindness of the governors of Bethlem Royal Hospital, on Thursday, August 7th, and those who wish will have an opportunity of visiting the wards of this ancient and royal hospital for the insane.

The sectional dinner will take place on Thursday, August 7th, at the Imperial Restaurant, Regent Street (7s. 6d., exclusive of wine). Each member is expected to pay for his own dinner and that of any guest he may ask.

The Lord Mayor of Cardiff has most kindly issued an invitation to lunch to those members of the Section desirous of visiting the Cardiff Mental Hospital. As this will mean a whole day excursion from London, the date has been fixed for Wednesday, August 13th, the day following the closing of the Congress. This mental hospital is thoroughly worth a visit, as it is one of the latest and most completely equipped mental hospitals in the country. Those who desire to go are requested to apply for tickets as soon as possible, in order that the Lord Mayor may have time to arrange for the luncheon, etc.

THE usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on June 20th, when Dr. J. F. Allan was in the chair. The accounts presented showed that the sickness claims were decreasing with the advent of the warmer weather. The number of claims for accidents in connexion with motor cycles and cars is increasing, and the severity of some of these is shown by the fact that one member at least has been on the sick list for two years, and many others of varying duration from two months downwards. Fractures of the arm from back fire when starting are the most frequent cause of accident. The society charges no extra premium for members using motor cars or motor cycles. The new business was well up to the average. A letter was read from Sir Alan Reeve Manby emphasizing the necessity of joining when young, and of the great feeling of security it gave to him to know that if necessary he could always rely on the society's benefits when disabled. He urged all young struggling doctors to join at once. Prospectuses and all further information can be obtained from the Secretary, Mr. Bertram Sutton, 33, Chancery Lane, W.C.

ONE HUNDRED YEARS AGO.

VACCINATION IN 1813.

IN 1813 Edward Jenner was still alive; he was 64 years old, and he had ten years before him in which to enjoy the public recognition of the value of the great discovery which he had made. It was in this year that the University of Oxford conferred on him the degree of M.D. Six years had elapsed since vaccination had been made compulsory in Bavaria and three since Denmark had followed suit; but forty years were to pass before the United Kingdom, Jenner's own land, was to take this great forward step in preventive medicine, although in twenty-seven years—namely, in 1840—Parliament was able to spare a few hours from the consideration of the penny post and other matters for the passing of an Act which provided for the payment of vaccination fees out of the rates. This Act, however, simply recommended vaccination, and left the parent free to say whether he would have his child protected by it or not, so slight was then the conscience of the community respecting the safeguarding of all persons against the diseases of some. Even the Act of 1853, although it nominally made vaccination compulsory, was practically very imperfect until it was strengthened by those of 1867 and 1871, which established and arranged for the payment of vaccination officers.

In 1813, however, all this legislation was still in the future. Seventeen years previously (in May, 1796) Jenner had performed his first vaccination; two years later he had published his *Inquiry into the Causes and Effects of the Variolae Vaccinae*, and other papers appeared from his pen in 1799, 1800, and 1801. Vaccination about this time spread to America, France, Spain, Portugal, Turkey, Greece, and the Mediterranean generally; the Royal Jennerian and London Vaccine Institution was founded in 1802–3, and was replaced with Government aid by the National Vaccine Establishment in 1808; and although it began about this time to be evident that Jenner had been wrong in thinking that vaccination conferred a lifelong immunity against small-pox, it was generally recognized that he had made one of the greatest advances in the healing art and had given a boon of incalculable value to the whole world. The whole world, however, had not yet the opportunity of participating in the priceless blessing of protection from small-pox, for the simple reason that there were many countries, especially islands, where no vaccine material could be got. In these days when lymph in capillary tubes goes everywhere by post it is difficult to realize that in 1803 the only way in which vaccination could be made possible in Spanish America was by sending out from Spain children who had not had small-pox and vaccinating one or two of them each week until the voyage was ended, and the last batch of children landed with their pustules in a ripe state to furnish lymph for the babies and adults on the other side. So in 1813 there were chances all over the world for ship surgeons and the like to carry Jenner's great boon to lands in which small-pox reigned supreme and to repeat there the beneficent experiment of vaccination on a large scale.

Such a chance came to William Scot, surgeon in the Honourable East India Company's service, and he told the story of what happened in the July part of the *Edinburgh Medical and Surgical Journal*,[1] under the title of "Report on the State of Vaccination in certain Districts of India, and in the Isles of France and Bourbon."

This William Scot was possibly the man who graduated M.D. at Glasgow University in 1786. There were several William Scotts in Edinburgh during these years, one in 1786 also, and it is true that the paper in the *Edinburgh Medical and Surgical Journal* was dated from Edinburgh; but these men spelt their names with two *t's*, whilst the Glasgow graduate had only one *t* in his name. In Innes Addison's *Roll of the Graduates of the University of Glasgow* (p. 540, 1898) this William Scot is described as a native of Edinburgh; it is stated that he "probably practised in London," and that he was admitted a Licentiate of the Royal College of Physicians of London on April 2nd, 1792. Whether this be the man or not, there seems to be good reason for identifying him with the William Scot who in 1824 published at Madras a "Report on the epidemic cholera as it has appeared in the territories subject to the presidency of Fort St. George"; this was a book of about 350 pages with a map, and it was evidently much thought of, for it was translated into French (1831) and into German (1832). There is no physician or surgeon of the name of William Scot or Scott in the *Dictionary of National Biography*.

From January, 1806, to September, 1810, Dr. Scot was in charge of vaccination throughout a district on the Coromandel coast, extending about 150 miles alongshore and fifty miles inland. There, with the help of four native vaccinators, he vaccinated upwards of 40,000 persons. Although he invited reports of failures, feeling sure that in so large a number of cases there must have been some, yet none was given in. The efficacy of the protection was soon tested, for, whilst small-pox was never totally absent from the Coromandel coast, an epidemic of it occurred once a year between April and October, and made these months a time of universal terror and dismay. Let us note the changed state of things in April, 1809; in that month Surgeon Scot reported to the superintendent-general of vaccination in Madras that he had no information of any small-pox being in the neighbourhood. Again, in June he wrote: "The small-pox has not appeared this year in these districts, contrary to custom"; and again, in August, he reported upon the "unprecedented exemption," and even suggested that perhaps the cooler weather might partly explain it. When 1810 came, however, and brought with it no such peculiarity of season, Dr. Scot was forced to ascribe the continued happy exemption from small-pox to its true cause, vaccination. Here is his final report in September, 1810, before he proceeded on foreign service: "During my superintendence of vaccination in the Nellore and Ongole districts upwards of 40,000 persons have been vaccinated, and none can now be procured to undergo this process but such as are of a very tender age; and I have proof of the efficacy of my labours, in the exemption of these districts from the epidemic small-pox, *for two years past*, though infection has been frequently introduced."

But whilst Surgeon Scot's success in India was complete and striking, he was observant enough to notice and comment upon a disquieting circumstance; this was the sudden and marked fall in the number of persons coming forward for vaccination as soon as the scourge was seen to be checked. So early was this characteristic result of the success of vaccination evident! Of course, the apathy of the native was partly to be blamed; in the absence of a powerful stimulus, he became careless; but yet there is here a characteristic which has been noted many times in the past hundred years, and has never been more prominent than at the present moment. The very completeness of the success of vaccination has ever been the great factor in the opposition which has sprung up against the procedure.

Dr. Scot next had an opportunity of trying the experiment of vaccination in the Mauritius (Isle of France) and in the Île de Bourbon (Réunion). He introduces the subject of the Mauritius experiment somewhat ingenuously in the following sentences:

> It was always an object of solicitude with the British in India to extend the blessings of vaccination as widely as possible, and the French islands, more than once, received fresh supplies of the virus, when, by neglect or mismanagement, it had been lost. When the expedition was preparing at Madras, for the reduction of the Mauritius in 1810, I offered my services to the Government for conveying thither the vaccine disease. They were immediately accepted. We have thus the singular but gratifying spectacle of a Government taking an active interest in the ulterior welfare of a people, at the very moment when its energies were directed to their conquest and subjugation.

Yes, we may agree, it was a rather singular spectacle, but many such paradoxes arise when a war of conquest and a campaign of hygiene are waged simultaneously. One thinks, too, of the story of the walrus and the carpenter, and their offer to the oysters to come for a walk along the briny beach.

Be this as it may, Surgeon Scot had an opportunity after the capitulation of the islands, of attempting the systematic protection of the population against small-pox. He found that there was vaccine in the Mauritius and Bourbon, but there was no proper system of vaccination, and this defect seemed to have arisen from a spirit of jealousy among the private practitioners. "No one being appointed and paid by Government to conduct vaccination, it was the peculiar province of none, and every

[1] *Edin. Med. and Surg. Journ.*, vol. ix, pp. 256-269, July 1st, 1813.

practitioner resisted the interference of another with those families by whom he was employed." This difficulty was removed by the appointment of Surgeon Scot as superintendent, with two French surgeons acting under him and in the pay of the Government. One of the surgeons was to vaccinate the population of Port Louis, the capital of the Mauritius, and the other that of St. Denis, the capital of the Île de Bourbon; both were to keep up a stock of vaccine by inoculations of infants. A proclamation was issued explaining the whole arrangements; the public was informed regarding the dangers of small-pox and instructed in the means of prevention, the medical men were reassured that no invasion of their privileges was in contemplation, and the civil authorities were enjoined to carry out the orders of the superintendent and to give him every assistance. Scot had two purposes to carry out: One was the immediate vaccination of the adult population, and the other was the successive vaccination of the children as they were born. The plan adopted was as follows: The Isle of France was divided into nine districts and that of Bourbon into eight; in each of these was a *commissaire civil*, his deputy, and secretary. This officer was armed with the authority of a magistrate, and in his office was a register of every person resident in his district, with a record of births, marriages, and deaths. Dr. Scot first secured authentic copies of these documents as well as a regular quarterly return of births; then he got the vaccinators' returns and compared them therewith, and so he was able to form a correct idea of the state of vaccination in the islands and to have at his disposal all the infant subjects for the preservation of the vaccine. Further, he traversed both islands in all directions, giving information and explanations freely. These, of course, are the veriest commonplaces of vaccination as it is known to this generation, but it was not so in 1813, and in estimating Dr. Scot's wisdom and administrative skill we must not forget this.

But human nature was not different in those days from what it is now, notwithstanding the fact that small-pox was then no spectre, but a stern and cruel reality. Here is a sentence from the superintendent's report: "I soon found that it would be necessary to force the people to pay attention to their own interests; for, though it was evident to their reason that the measures recommended were necessary and salutary, their idleness, their levity, and their indifference but ill seconded my best exertions." Nevertheless, wonderfully good results were got, when in July, 1811, some cases of small-pox were brought from Madagascar on board the captured French frigates, and the contagion was established on the shore; for, from that time till the end of November, only between 40 and 50 cases occurred, and amongst them only 7 were believed to have been vaccinated. Now this was an extraordinary contrast with previous experiences. In 1756, when the small-pox first appeared in the Mauritius in an epidemic form, it was calculated that two died out of every five attacked by it; in 1771 the island was almost depopulated, and in 1792 more than 20,000 people perished in a third epidemic which then raged. Dr. Scot was fully entitled to speak of the astonishing contrast, even under the disadvantageous circumstances which prevailed, and to express his belief that such a change "must carry conviction to the most sceptical mind." And there was a degree of conviction too, for he was able to write: "The inhabitants now venerate the name of Jenner, and, associating it with the gloomy recollections of 1792, lament that his labours had not been consummated at a more early period."

After some interesting remarks on the peculiarities of the skin of the negro in connexion with the performance of vaccination, Dr. Scot went on to refer to two matters in which he had followed the suggestions given by Mr. Bryce. This was no doubt the J. Brice who published a book in Edinburgh in 1802 (second edition in 1809), *Practical Observations* on the inoculation of cow-pox, pointing out a test of a constitutional affection in those cases in which no fever is perceptible. One matter was the utility of a second inoculation on the fifth day after vaccination as a test of the efficacy of the first. This test was recommended in all cases, and was adopted in many by the surgeons working under Dr. Scot. The other matter was the employment of the dry crust for the propagation of the vaccine infection, as described by Bryce. Dr. Scot found that it was nearly or fully as successful as the recent virus. He gives an interesting illustration of its usefulness in emergencies:

> During the existence of small-pox at the Isle of France, in September, 1811, seme slave-ships were seized at Port Louis by one of our frigates. The slaves were landed, to the number of 359, and put into one large building; 39 of them had evidently had the small-pox. As no time was to be lost in a case of such urgent danger, I immediately inoculated 320 of them, with the matter of crust dissolved in water, there not being sufficient recent virus to be had for this purpose. I had previously taken measures to have always at hand a large supply of these crusts, to send to distant quarters, or to meet any emergency. Of these 320 inoculations, 174 took effect, and only 53 of the 146 failures took the disease on a second inoculation, which was still performed principally, though not entirely, with the matter of crust. The other failures were tried again and again with recent virus; 84 resisted every attempt, and 9 were sent to hospital, of whom I cannot at this time give any account.

By the word "failure," Dr. Scot, of course, meant that no pustule followed inoculation. He was much pleased with the dry crust method, and regarded it as an important improvement, especially for hot climates, where the preservation of the virus was difficult.

Difficulties were gradually yielding, and Dr. Scot's plan or method was beginning to get into full working order when, towards the close of 1811, he was ordered to England in charge of one of His Majesty's frigates. There are details in connexion with the scheme which have not been alluded to, chiefly of the nature of fines for want of care in the after-management of the inoculation and for neglect to report results. An attempt was also being made to reduce the number of concealed births among the slaves in the islands. Dr. Scot is modest regarding the value of his plan. He wrote: "I am fully sensible that a plan of this arbitrary nature would not be practicable in England to its full extent; but it was perfectly compatible with the laws and government of the French islands before and after their capture, and may perhaps apply to many of our other colonies."

This hundred-year-old record of the successful control of small-pox by vaccination has many modern details in it. The people's gratitude and veneration of the name of Jenner in the presence of the object lesson of a severe epidemic, their amazing apathy in the absence of such a reminder, their disinclination to brook compulsion even for their own good, and their inveterate tendency to neglect precautions and to evade restrictions in all circumstances—these are present as well as past phenomena in the history of vaccination.

EPSOM COLLEGE.

SIR HENRY MORRIS, the Honorary Treasurer of Epsom College, presided at the annual general meeting of governors on June 27th at the office in Soho Square, W. The proceedings began by the announcement of the result of the polling, the successful candidates being as follows:

Pensionerships.

	Votes.
Simpson, Maria	6,567
Stickland, Clara	5,642

Foundation Scholarships.

Smyth, Samuel D.	13,149
Woodhouse, James Y.	7,410
Clarke-Baylis, Walter E. H.	7,328
Gillam, Geoffrey G.	6,701
Alexander, John V.	5,527
Hare, Kempton P.	5,324
Simmons, John W.	5,234
Blake, Edgar V. M.	5,182
Thyne, William	4,726
Hickling, John W. T.	4,703

Susan Harriet Tait Annuitant: Black, Maud M. 4,581

Treasurer's Address.

In proposing the resolution that the report and the income and expenditure account for the past year be received and approved, the CHAIRMAN emphasized the urgent need of new subscriptions and donations, as there had been a slight decrease in the numbers of donors and subscribers during the past year. He referred to the possibility of contributions being diverted to another medical charity for which they all had the greatest sympathy in consequence of its having received the prefix "Royal," thus causing its title to approximate to that by

which the College was known for fifty years—namely, the Royal Medical Benevolent College. He observed that it might be necessary for the Council to take steps in the near future to emphasize the fact that the royal medical foundation attached to the College has as its special object the provision of fifty pensions of £30 a year each for necessitous medical men or their widows, and a high class education, together with board, clothing, and pocket money, for fifty necessitous sons of medical men.

In commenting on the expenditure of the sum of £6,232 14s. 6d. on structural alterations and extensions at the College, he remarked that as the College had been built sixty years, and was in an exposed situation on Epsom Downs, it was natural that the cost of maintaining the buildings in good condition should be high, apart from the increased accommodation needed as a result of the extension of the methods of education and the rapid growth of the numbers in the school. In 1904 there were 227 boys, in 1908 the number had increased to 264, whilst there had been a steady slight increase from year to year, until last year the number reached 294. No one could visit the College and inspect the teaching arrangements without coming to the conclusion that the educational work at the College was of a highly satisfactory standard. It was impossible for boys to have a better education than that provided on both the classical and modern sides. He referred to the fact that extraordinary expense again had to be incurred, as the chapel spire was in a dangerous condition, and during the gales in March and April the Lower School gymnasium was completely blown down. Furthermore, it would soon be necessary to extend the accommodation in the College chapel, and he was looking forward to the time when an isolation block for infectious cases could be provided, as well as a pavilion in the playing fields worthy of the College and its position amongst the great secondary schools of England. In conclusion, he said that the profession might well be proud of Epsom College, and that the subscribers and donors could rest assured that their contributions would be expended to the best possible advantage.

Report of Council.

The report of the Council to the governors stated that there were at the present time on the books of the College 48 ordinary pensioners, 9 Pugh pensioners, 10 France pensioners, 16 Da Silva pensioners, 3 Morgan annuitants, 5 Highett pensioners (of whom 2 receive £30 a year and 3 receive £10 a year), 1 Cheyne annuitant, 4 Brodie Sewell pensioners, 2 Christie pensioners, and 1 Sir Thomas Smith pensioner. Since the last annual general meeting, H. W. Hodges had won a classical exhibition at Hertford College, Oxford, and A. J. M. Lander had gained a similar exhibition at Sidney Sussex College, Cambridge. Seven boys had passed the whole or a part of the first examination for medical degrees of the University of London; twenty-two boys had passed the matriculation examination of the same university, three of them being in the first division; fourteen boys had gained the higher certificate of the Oxford and Cambridge Schools Examination Board; fifteen had obtained school certificates; and eighteen had gained lower certificates. The general work of the College and the discipline had, as usual, been satisfactory; cricket, football, and hockey had been played with vigour and success; and the various school institutions were in a flourishing condition. Last year there were over 150 members in the Officers' Training Corps, of whom five passed the examination for certificate "A."

The report having been adopted, the retiring members of Council and the auditors were re-elected, and Surgeon-General Sir A. M. Branfoot and Sir Francis H. Champneys were elected members of the Council to fill vacancies.

Vote of Thanks to Sir Henry Morris.

The proceedings concluded with the passing of a cordial vote of thanks to Sir Henry Morris for the great services which he renders to the College as treasurer, which was moved by Sir WILLIAM CHURCH, Chairman of the Council, and seconded by Sir JAMES REID. In returning thanks, Sir HENRY MORRIS referred in appreciative terms to the assistance rendered to him by the Council and the various committees, as well as by the permanent staff at the office in London and at the College.

SCIENCE NOTES.

ON June 20th Professor F. G. Benedict gave a lecture, in the Physiological Laboratory of the University of London, on the work of the Carnegie Nutrition Laboratory at Boston, of which he is Director. Professor Benedict perhaps may be called the Sanctorius of the twentieth century, for the last refinements of modern apparatus which are being applied to the study of nutrition in that laboratory include weighings performed with objects similar to those of Sanctorius, though with vastly greater accuracy. The organization of the laboratory is of the most elaborate kind, and the Director is approaching his problems in an admirable spirit which impels him to take nothing for granted. Evidence of this is afforded by the fact that one of the first pieces of work he made public was contained in a recent essay on the composition of the atmosphere, with special reference to its oxygen contents. In this essay he gave an historical account of the investigations of the atmosphere from the days of Scheele and Priestley to the present time. This was followed by an account of the experimental work of the Nutrition Laboratory, which has been engaged in an elaborate inquiry into the nature of respiratory exchange in relation to metabolic processes. The research involved, according to an article signed T. E. T., in *Nature* of June 19th, (1) the estimation of the comparative oxygen content of uncontaminated outdoor air under all conditions as to the direction and strength of the wind, of the temperature, of cloud formation, of the barometer, and of the weather, including rain, snow, fog, and mist; (2) a study of the influence of the temperature of the reagent upon its absorptive power; (3) an examination of the air over the North Atlantic Ocean; (4) on the summit of Pike's Peak; (5) in the crowded streets of Boston and in the subways of New York and Boston. Such a programme, of course, necessitated the analysis of many hundred samples of air, and the greatest care in control in verification, especially in tracking down and eliminating sources of possible error. A routine method was eventually worked out and showed that no material fluctuation could be detected over a period extending from April, 1911, to January, 1912. The composition of the air was found to be constant, in spite of all alterations in weather conditions, barometric or thermometric changes, changes in humidity, in the direction and strength of the wind, and in the state of vegetation. The average results of 212 analyses showed 0.031 per cent. of carbon dioxide and 20.9 per cent. of oxygen. Dr. Benedict concludes, therefore, that air is a physical mixture with the definiteness of composition of a chemical compound. While the combustion of fuel and the vital processes of men and animals result in a local increase in carbon dioxide and decrease in oxygen on the one hand, and vegetable growth results in a decrease in carbon dioxide and increase in oxygen on the other, the extraordinary rapidity with which the local variations in the composition of the air are equalized is accentuated by the observations on street air, which show but the slightest trace of an oxygen deficit. The laboratory has been engaged in a very elaborate inquiry into the nature of respiratory exchange in relation to metabolic processes, and much of Dr. Benedict's lecture was devoted to describing the complicated instrumental equipment in use and in illustrating the means discovered for detecting sources of fallacy. He stated that he was preparing a full report on the result of his investigations, and its publication will be awaited with much interest.

Much welcome light has been shed recently on the causation and modes of conveyance of measles. The infective agent is commonly believed to reside in the blood, nasal and oral secretions, and in the scales, but experimental proof has been lacking. Anderson and Goldberger in 1911 produced experimental results of the highest importance. They showed that the disease could be conveyed to monkeys by inoculation with human blood from cases of measles. The infective power of the blood began to diminish rapidly soon after the first appearance of the rash, and the period of infectivity is therefore probably confined to the pre-eruptive and early eruptive stage. The infective agent in the blood in a number of cases was found to be capable of passing through the pores of a

Berkefeld filter, and thus belongs to the growing order of ultramicroscopic viruses. It can withstand desiccation or freezing for twenty-four hours, but is killed by heating to 55° C. for a quarter of an hour. Normal monkeys exposed to contagion of experimentally infected monkeys developed measles after an incubation period of five to eleven days. The nasal and oral secretions from human cases within forty-eight hours of the onset of the rash reproduced the disease in monkeys on hypodermic injection, but as the disease progressed the infectivity of these secretions diminished and was lost. This agrees with the clinical opinion that cases of measles are not infective towards the end of convalescence. Anderson and Goldberger failed to demonstrate the presence of the virus in the scales four to seven days after the appearance of the eruption. These findings have been corroborated by other observers. Nicolle and Conseil succeeded in infecting monkeys with blood withdrawn twenty-four hours previous to the appearance of the rash, and Lucas and Prizer observed Koplik spots in experimentally infected animals.

LITERARY NOTES.

A NEW work by Sir William Osler, dealing with the evolution of modern medicine, will be published during the autumn by the Yale University Press, whose books are issued in this country by Mr. Frowde's successor, Mr. Humphrey Milford.

Mr. Milford will also shortly publish for the Royal Society of Literature a work in two volumes, entitled, *Syrian Anatomy, Pathology, and Therapeutics, or the Book of Medicines*, edited by Dr. E. A. Wallis Budge. The work contains the text of the great Syriac *Book of Medicines*, edited from a rare manuscript in the possession of Dr. Budge, together with an introduction and an English translation. These, it is stated, are here published for the first time.

It is announced that *Science Progress*, a quarterly periodical published by Mr. Murray, will henceforth be issued under the editorship of Sir Ronald Ross. Among the scientific articles are two independent studies of "Woman's Place in Nature" as seen from different points of view, and a paper on "Scientific National Defence" by a military expert.

The Syndics of the Cambridge University Press announce that they have recently taken over the publication of the *Biochemical Journal*, which has now become the property and the official organ of the Biochemical Society. The journal, which will be issued from six to eight times a year, will be under the editorship of W. M. Bayliss, D.Sc., F.R.S., University Professor of General Physiology, University College, London, and Arthur Harden, D.Sc., F.R.S., University Professor of Biochemistry, Lister Institute, London. Inquiries concerning details of publication and all questions concerning subscriptions should be addressed to Mr. C. F. Clay, Cambridge University Press, Fetter Lane, E.C.

The University of London Press has at present in preparation a book by Dr. R. Fortescue Fox, entitled, *The Principles and Practice of Medical Psychology, being the Science of Treatment by Waters and Baths.* It will be published in July.

Fabricius ab Aquapendente, Harvey's teacher at Padua, died in 1603. He has been called the father of modern surgery. The Senate of Venice conferred upon him the Order of St. Mark and an annual pension of 1,000 crowns. He had a cabinet set apart for presents which he received instead of fees, with this inscription, *Lucri neglecti lucrum.*

Mr. E. V. Lucas, in his charming book entitled, *A Wanderer in Holland*, says that Samuel Ireland, one of Johnson's contemporaries, and father of William Henry Ireland, author of *Vortigern* and other Shakespeare forgeries, wrote *A Picturesque Tour Through Holland, Brabant, and Part of France* in 1789, in which he mentions a whimsical signboard which he saw somewhere in Holland, but which Mr. Lucas, to his regret, failed to find. It was a tree bearing fruit, and the branches filled with little naked urchins, seemingly just ripened into life, and crying for succour; beneath, a woman holds up her apron, looking wistfully at the children, as if entreating them to jump into her lap. On inquiry, Ireland found it to be the house of a sworn midwife, with this Dutch inscription prefixed to her name: "Vang my, ik zal zoot zin"—that is, "Catch me, I'll be a sweet boy." "This new mode of procreation, so truly whimsical, pleased me," Ireland adds, "not a little."

Some colleagues, pupils, and admirers of the distinguished Italian physiologist, Luigi Luciani, propose to present him with a commemorative medal struck at the Royal Mint from a design by the well known sculptor G. Tonnini, on the occasion of the completion of his great *Treatise on Physiology.*

Dr. A. F. Le Double, of Tours, has just published (Vigot Frères, Paris) a work entitled, *Bossuet, anatomiste et physiologiste.* The "Eagle of Meaux" had a strong bent towards medicine and the sciences which form its foundation. He studied anatomy under the famous surgeon Duverney with his pupil the Dauphin. In his sermons there are many illustrations from anatomy and physiology expressed in his incomparable style. He is said to have gone to the dissecting room for practical knowledge, and a proof that he understood what he was talking about is that he does not fall into the absurdities which few preachers escape who allude to such matters for purposes of edification. According to Dr. Le Double, Bossuet not only learnt all that was known in the seventeenth century but foresaw certain truths which have been established since his day.

The first number of a new periodical, entitled the *British Journal of Surgery*, has just been issued. It is to be published quarterly under the direction of an editorial committee, consisting of Sir Berkeley G. A. Moynihan (Leeds), chairman; Sir Charles B. Ball, Mr. Arthur Barker, Sir William Bennett, Mr. Frederic F. Burghard, Mr. F. M. Caird, Sir W. Watson Cheyne, Mr. Edred M. Corner, Mr. T. C. English, Mr. C. H. Fagge, Sir Rickman J. Godlee, Sir A. Pearce Gould, Mr. Sampson Handley, Mr. Robert Jones, Sir W. Arbuthnot Lane, Mr. Geo. H. Makins, Mr. Mayo-Robson, Mr. Rutherford Morison, Sir Thomas Myles, Mr. R. H. Parry, Mr. D'Arcy Power, Mr. Thomas Sinclair, Mr. Harold J. Stiles, Mr. E. H. Taylor, Mr. J. Lynn Thomas, Mr. H. Alexis Thomson, and Mr. William Thorburn. Mr. E. W. Hey Groves (Bristol) is editorial secretary, and there is an imposing array of collaborators. In the prospectus the committee states:

> It seems to us that British surgery at the present time has two urgent wants:
> 1. *A periodical devoted solely to surgery;* and
> 2. *An association of those engaged in the practice or teaching of surgery, or in surgical research,* for the promotion of scientific advance by regular meetings and discussions. (Such a body would, by its corporate existence, encourage progress from within, as well as make it easier for its members to keep in touch with surgical progress as represented by similar associations in other countries.)
>
> The establishment of an association may possibly be facilitated by the publication of the journal, and both may be best promoted by starting the periodical, for which we now plead.

In an introductory note Sir Rickman Godlee states that it is the intention of those who are responsible for the new journal that it shall include the best, and, as far as may be, only the best, British surgical work of the day. It will contain original articles, comments, reviews, and criticisms. In the first number the place of honour is given to a portrait of Lord Lister, with a short note on the work which he accomplished. The other contents are as follows:—David Newman: Renal Varix and Hyperaemia as Causes of Symptomless Renal Haematuria. D'Arcy Power: Gall Stones—a Plea for Earlier Operation. Albert Carless: A Case of Perineo-Scrotal Dermoid Cysts. Sampson Handley: The Technique of Butlin's Operation of Marginal Resection of the Tongue. G. E. Gask: Autoplastic Graft of Fibula into Humerus after Resection for Chondro-sarcoma, with observations on Bone Grafting. H. Morriston Davies: The Influence of the First Costal Cartilage on Apical Tuberculosis, based on a study of 402 specimens. Robert Jones and S. Alwyn Smith: On Rupture of the Crucial Ligaments of the Knee, and on Fractures of the Spine of the Tibia. Robert E. Kelly: Intratracheal Anaesthesia. There are also critical reviews and reports of visits to surgical clinics at home and abroad. There is an interesting article on instructive mistakes and short notes of rare and obscure cases. The *British Journal of Surgery* is published by John Wright and Sons, Ltd., of Bristol. It is excellently printed and well illustrated.

British Medical Journal.

SATURDAY, JULY 5TH, 1913.

THE FUTURE DEVELOPMENT OF THE ASSOCIATION.

In the Supplement of the present issue will be found the Supplementary Report of Council, giving an account of its doings since the issue of its Annual Report on May 3rd. It is to be hoped that no member of the Association will be deterred from reading this document by the fact that its length makes the task seem at first sight rather formidable. The Report is not only an interesting record of work accomplished, but a testimony to the wide range of activities of the Association. In addition to the matters which may be said to be more or less routine, the Report deals with two or three subjects of quite exceptional interest. On these, and on two reports which appeared in the Supplement of June 21st, the attention of the members of the Association should be focussed. These documents deal with the organization of the profession and the future development of the Association, questions which the events of the last two years have forced into prominence.

The Association has been greatly developed as a fighting machine during the last ten years; before its reconstitution in 1902-3 its medico-political activities covered a much smaller field, and the Divisions were unborn. Comparatively early in its new career the Association had forced upon it a fight for the protection of the interests of the profession, from which even an old and well-tried organization could not have emerged unscathed. The history is fresh in all our minds, and it is not necessary to say more now than that though the Association succeeded in making great improvements in the National Insurance Act—an achievement for which it has not yet had from the profession the recognition it deserves and will undoubtedly later receive—certain weaknesses in the organization of the profession have been disclosed, and call for earnest attention.

During the past session much of the time of the Council and its committees has been spent in examining the breaches made in the profession's defence, in estimating how far these were due to the almost irresistible power of the State and how far to technical weaknesses in the defence, and how they can be remedied by alterations in the methods of organization. The result of all this cogitation will be seen in the scheme of the Metropolitan Counties Branch Council and the comments of the Council thereon, published in the Supplement of June 21st; the Report of the Council on the Referendum and Postal Vote published at the same time; and the reports appearing in the present issue of the Supplement on the Possibilities of Extension of the Powers of the Association and on the proposed Special Fund for the organization of the profession. These reports require to be co-ordinated in the mind of any member who really wishes to know where the Association stands and to take his share in determining what its future is to be.

It will perhaps be most convenient if the reader will take first the report on the Extension of the Powers of the Association (Supplement, page 15). In it will be found a history of the steps which the Association has taken in recent years to free itself from the trammels necessarily imposed upon it by its registration as a company with limited liability conducted not for profit. Those who are impatient of these trammels should try to cast their minds back to the time when the founders of the Association, after nursing it through its infancy, came to the conclusion that to safeguard its funds and to restrict the liability of the members of its executive, it was necessary to give the organization the protection of the Companies Act. That was the legitimate and in fact the only proper course to take at that time, and under the Companies Act the Association has grown and prospered. New problems have now arisen, and when it is desired to deal with them it is found that the funds and property which the Association has accumulated through all these years are impressed with certain restrictions inherent in any limited liability company. These restrictions, though they have not prevented the Association becoming what it is—namely, the one representative organization of the profession in the British Empire—prevent it from doing certain things which are ardently desired by many members. These things when analysed, as they are in the Report, are seen to involve only one or two matters of first-rate importance, but these are outside the scope of any limited company.

The Report describes the various ways which seemed open to the Association in order that it might meet the new needs with new methods, and arrives at the conclusion that there are probably only two ways open; that both are technically outside the scope of the Association, and that it is impossible for the Association, while retaining its identity and its property, to widen its scope in the manner desired by some members. For the consideration of the two available methods we must refer our readers to the Report itself, where they will also find a thorough discussion of a question which has aroused considerable attention recently, and will be debated at the forthcoming Representative Meeting—namely, the proposal to form a medical union registered under the Trade Union Acts. We hope members will carefully follow the discussion in the Report for themselves in order that they may have in mind the materials for forming a definite conclusion on a matter of the utmost importance to the profession.

Assuming, as on legal advice we must, that the Association can only continue its work as a limited liability company registered under the Companies Act, we come naturally to the consideration of the internal changes necessary to adjust it to new circumstances. Here the reader will note the interesting discussion in the Report of the question whether the recent failure of the profession and the Association in December and January last was really due to defects in organization, or was not rather due to the fact that it had not been sufficiently realized that the concessions made by the Government, in response to the pressure of the Association, had persuaded many practitioners that if the profession had not won its battle entirely, it had at any rate gained so much as to make it worth their while to give the terms a trial—that is, that the failure of the Association was really due to its success. It is an interesting question, which we leave our readers to decide for themselves with the help of the Report. Turning to internal and technical changes, we have

the suggestions of the Metropolitan Branch Council (SUPPLEMENT, June 21st); some of them the Council has not hesitated to endorse, while in respect of others it makes comments which it is hoped will assist the Divisions in forming a judgement.

The proposals of the Metropolitan Branch Council to limit the power of the Divisions and to increase that of the Branches will undoubtedly give rise to animated debate both in the Divisions and in the Representative Meeting. They should be discussed entirely on their merits and irrespective of the *status quo*, for the only question which really matters is, "Will the new proposals, if adopted, give greater efficiency?" The bold proposal definitely to change the character of the Representative Body from that of a meeting of instructed delegates to that of a deliberative assembly, put forward by the Metropolitan Counties Branch Council, is emphatically endorsed by the Council, which sees in the events of the past few months the condemnation of a system of pure delegation involving the restriction of the discretion of a Representative by a resolution passed, it may be, three months before he is called upon to give his vote. Here, again, we have in the Report of Council dealing specially with this point a discussion of first principles, and also of the inner meaning of the events of last winter, which cannot fail to interest those who read it.

At this point members will find it convenient to consider the Report on the Referendum and Postal Vote (SUPPLEMENT, June 21st, p. 563). It deals with a question which has long been a vexed one in the Association. Some would regard the adoption of the postal vote as a great improvement in the organization of the Association. Others would look upon it with grave suspicion as tending to give members an excuse for staying away from Division meetings where alone there can be that discussion which is so useful a preliminary to the formation of a considered opinion. There are, however, active and interested members who find it very difficult to attend Division meetings, but would gladly take advantage of the new method. Whether the postal vote would tend to smaller interest in the Division meetings is open to argument. If it did it might be a bad thing for the Association. In the meantime there are in the Report under consideration several questions which Divisions are asked to answer, and thus to give to Representatives an opportunity of voicing the opinion of their constituents in the Representative Meeting.

Finally, we come to the most revolutionary of all the reports, and one which should be studied with an open mind by every member. That is the Report on the proposed Special Fund for the organization of the profession (SUPPLEMENT, page 25). It is a bold attempt to deal in a comprehensive fashion with the problems of how the profession ought to be organized, what such organization would cost, and how the money is to be raised. The voting on the proposal will be a touchstone for those members of the profession who have been declaring that the organization of the profession is about as bad as it can be, and that it should be put right at once by any method, however revolutionary and at whatever cost. The Council here presents a method, bold, simple, comprehensive, and cheap—cheap, that is to say, if the work proposed to be done is compared with the modest demand on the individual members of the profession. For an annual subscription of £5 doctors are now offered a chance of organizing themselves in a manner equal, if not superior, to that of any of the large trade unions, and also an opportunity of participating in certain insurance advantages which should appeal with great force to many members of the profession. If the plan were accepted and put into operation it would place the profession in a position to face with equanimity the struggles which must come soon in connexion with the Insurance Act and its inevitable developments. The Report is one which will, we believe, interest every practitioner who reads it. It does not blink the difficulties, and it may need modification, but the nature of its reception will at any rate give an answer to the important question, "Is the profession really anxious to be efficiently organized on up-to-date lines, and is it willing to pay the price?"

There are many other items of interest in the Supplementary Report of the Council, but we hope we have said enough to ensure that every reader of this article will at once read the Report for himself and will see that the Representative of his constituency when he goes to Brighton has some clear indication of the line his colleagues would like him to take there.

"TYPHOID SPINE."

IN a paper[1] read a short time ago before the Section of Medicine in the Royal Academy of Medicine in Ireland, Sir John Moore describes an interesting case of the rare condition known as "typhoid spine." The patient, a solicitor of 38, had a protracted attack of enteric fever, with epistaxis and intestinal haemorrhage. A tedious and uneventful convalescence set in, but after a few days was interrupted by pains in the back and lower limbs. Believing them to be of rheumatic origin, the patient tried to walk them off, but without success. They continued in the back, groin, and hip for some three weeks, when Sir John Moore detected a globular swelling behind and somewhat above the left hip; it gave a sense of fluctuation when palpated, and a surgeon was called in The diagnosis of a "cold abscess" was corroborated, and operation advised. On cutting down on the tumour next morning it disappeared, and only a few drops of blood were drawn off by aspiration; it was thought that possibly the wasted gluteal muscles formed a sac which simulated a tumour. A fortnight later there had been much pain in the lower limbs and in the back, at first on one side, then on the other; the back was literally as stiff as a poker, particularly the left erector spinae muscle. A fortnight after this, nearly eighteen weeks after the onset of the attack of enteric fever, the lower extremities looked wasted and were markedly paretic; co-ordination and sensation were unaffected, the knee-jerks were exaggerated, but ankle-clonus and Babinski's sign were not present. The patient could walk fairly well, once he was out of bed and had got his back straight. The lumbar region and upper sacrum were tender on pressure. The diagnosis seemed to lie between early tuberculous disease, toxic peripheral neuritis, and "typhoid spine." A skiagram was taken, and showed definite osteo-periostitis on the left side of the third lumbar vertebra, spreading down to the fourth. Dr. W. G. Harvey, the skiagrapher, considered the *x*-ray appearances strongly against the idea of tuberculous infection. The patient was treated by rest, with massage to the back and limbs, and recovery was complete in two and a half months.

The occurrence of periostitis as a sequel of enteric fever has been regarded as fairly common since Sir James Paget first called attention to the subject.

[1] *Dublin Journal of Medical Science*, June, 1913.

As it usually occurs during or after convalescence from the attack—as much as seven years afterwards in a case recorded by Buschke—it probably escapes diagnosis in many instances. Thus Wilson records fifteen cases of periostitis occurring in 1,618 patients admitted to the London Hospital with enteric fever in ten years, and adds that at least five other patients were admitted to the hospital during that time, with periosteal abscess subsequent to enteric fever for which they had been treated elsewhere. Probably the majority of the cases do not go as far as suppuration, as, indeed, appears to have been the fact with Sir John Moore's patient.

It must not be imagined that periostitis of the vertebral column, spondylitis, or perispondylitis, are always and necessarily the cause of "typhoid spine." This non-committal term was coined in 1889 by Gibney in America, and has the advantage of including in its scope the minority—perhaps a very small minority—of the cases of "typhoid spine," in which there is no organic lesion and the condition is a neurosis, as Osler claims, and similar to the "irritable spine" that may occur after railway accidents and the like. It must be confessed that the pathological anatomy of "typhoid spine" is not yet properly known. This uncertainty is due to want of opportunity to study its lesions *post mortem;* about 100 cases have been recorded in the literature, but only one patient has died and been examined, when it was reported that there was "considerable periostitis of the dorsal spine with an obscure lesion of the spinal cord." The most recent writers[2] on the subject, however, go so far as to assert that the disease is a spondylitis, due to infection with the *Bacillus typhosus* and no other microbe. In favour of this view is the fact that spinal cyphosis often follows "typhoid spine," and was even present in two of the six "neurotic" cases recorded by Osler; suppuration has occurred in a few instances, though Wilson in 1906 could find no such case recorded in the literature. It may happen that the appearance of a "typhoid spine" coincides with the reappearance of a Widal's reaction in the patient's serum; so much so, indeed, that a relapse may be suspected, especially as the temperature may rise and oscillate between 100° and 103° F. for a time (Wilson).

Once the rarity of the condition has been admitted, the diagnosis of "typhoid spine" should not be difficult when its symptoms or signs appear either during the attack of enteric fever, or while the patient is convalescent from it, as is most commonly the case. Pain is the first symptom, and may be of the very greatest severity: Wilson describes it as "so electrifying in its sudden intensity as to be incomparable with any other sensation in the patient's experience; it was as if the spine had been broken across, the patient feeling that something had given way in his back. This most intense pain only lasted some seconds, but it was followed by several hours of severe pain during which the patient tried to fix his spine in a position of extension by placing his hands under the small of the back." Pains along the course of the neighbouring spinal nerves are common, as are "starting pains" at night and cramps of the muscles. Motor signs, paresis and wasting, are not rare; the sphincters are not often implicated. Physical signs corresponding to the perispondylitis that usually underlies the condition have been generally recorded; redness and swelling of the soft parts near the affected vertebrae with tenderness of the vertebral spines, and lateral or antero-posterior displacement of the vertebral bodies; in four-fifths of the cases it is the lumbar region that is attacked, and the local diagnosis has been much facilitated by use of the *x* rays. The presence of a marked Widal's reaction and of a leucocytosis in the blood would be much in favour of a "typhoid spine," and so would the presence of excess of albumen in the cerebro-spinal fluid; it seems that the *Bacillus typhosus* cannot be found or cultivated in either the circulating blood or the cerebro-spinal fluid of these patients. If, however, the "typhoid spine" does not come on till convalescence is over, and if the attack of enteric fever escapes due attention for any reason, the diagnosis of vertebral tuberculosis will very naturally be made, or perhaps the diagnosis of vertebral osteo-arthritis or peripheral neuritis if the case is free from gross physical deformity. The extreme rarity of "typhoid spine" and the great frequency, comparatively speaking, with which tuberculosis of the spinal column occurs, do much to justify such an error. But the error will be corrected if the blood serum is examined and Widal's reaction found, and if the history of a recent attack of enteric fever is obtained. "Typhoid spine" habitually comes on slowly and progresses irregularly; it lasts for from three to twelve months, suppuration is rare, death has been recorded but once in a hundred cases. And so the prognosis is good, although recovery may long be incomplete and permanent spinal curvature may be left.

[2] R. J. Weissenbach et J. Bonhoure, *Gaz. des Hôp.*, Paris, 1912, vol. lxxxv, p. 1775.

PELLAGRA IN GREAT BRITAIN.

THE recognition within a short time of cases of pellagra—a disease not previously supposed to exist in Great Britain—first in Scotland and more recently in England, is a matter of such considerable importance that it has seemed well to publish a series of papers in this issue, describing the general clinical features and the pathological lesions, including a description of the changes in the nervous system, written by Dr. Mott, together with an account of the natural history of the disease by Dr. Sambon. It is hoped that the coloured illustration of the cutaneous lesions of one of the cases under the care of Dr. Box in St. Thomas's Hospital will contribute to the recognition of any cases which may occur in Great Britain in the future.

The etiology of the disease is uncertain; it has heretofore been commonly attributed, especially in Italy where it is very prevalent, to the eating of damaged maize. Dr. Sambon has for some time maintained that it is an infective disorder transmitted by a small biting insect, the larval and pupal stages of which are passed in running water, and, with the assistance of Dr. Alfred J. Chalmers, he collected and published, partly in this JOURNAL, much evidence in support of this thesis. The prevalence of the disease in the United States having been established, the problem of its etiology was attacked with much energy in that country. The attempt to produce the disease in animals by means of spoiled maize and other foodstuffs failed, and the investigators then prosecuted their inquiry on the hypothesis that pellagra is caused by a living micro-organism, and not by a chemical poison. In the last issue of the *Journal of the American Medical Association* (June 21st, 1913), which reached this country after Dr. Sambon's paper in this issue had been prepared, Dr. William H. Harris published, from the laboratories of pathology and bacteriology of the Tulane University, New Orleans, a preliminary note on the experimental production of pellagra in the monkey (*Macacus*

rhesus) by filtrates of the affected tissues from fatal cases of uncomplicated pellagra.

Experiments on three rhesus monkeys are described. The animals were injected subcutaneously, intravenously, and intracranially with large quantities of filtrates through a Berkefeld filter from the tissues (brain, spinal cord, erythematous skin, inflamed intestinal mucous membrane) obtained from cases of typical pellagra shortly after death. The tissues were ground up together in a mortar with equal amounts of normal saline solution. Monkey 1, after showing immediate pressure symptoms, recovered from the operation, and remained apparently normal for many months, when irregular dark patches developed on the face, forearms, hands, back, and sides of the body. The animal gradually grew thin and weak, and finally died with all the signs of pellagra. Monkey 2 was inoculated on December 2nd, 1912. It remained apparently normal for a period of two months, and on February 12th, 1913, it was again inoculated with filtrates from another typical case of pellagra. Early in May it showed irregular patches of a copper or turkey-red colour about the face. On May 10th these patches were raised, considerably darkened, very dry, and more clearly defined; they extended across the nose, and spread in wing-like manner on either side under the eye and over the cheek. At this time copper-coloured lesions had appeared on the summit of the concha of both ears and the external canthus of the eyes, and also over the backs of the hands. There was a distinct symmetry in the bilateral arrangement and shape of these lesions. Subsequently the animal became depressed, emaciated and weak, slight diarrhoea developed, and there was considerable salivation; the tip of the tongue was granular and the papillae considerably enlarged. On May 28th the skin lesions had become almost black, and were beginning to crack and scale. Monkey 3 was inoculated on February 12th, 1913, with the same material as was used for the second injection of Monkey 2. At the date of the report it was in good condition but presented about the face a few irregular rust-coloured macules, quite like the early lesions of Monkey 2.

Microscopical sections of the affected skin of Monkey 1 showed lesions identical with those known to be characteristic of the skin in human pellagra (extensive hyperkeratosis of the epidermis, marked increase in the depth of the papillae, and abundant pigmentation in the deeper portions of the corium where many chromatophores had wandered into the deeper strata). According to Dr. Harris these experiments would indicate that a Berkefeld filtrate derived from human pellagrous tissues and inoculated into the monkey may cause in the latter all the essential clinical signs and symptoms, together with the pathological picture seen in the disease in man. Furthermore, they suggest that the cause of pellagra is a filterable virus or a micro-organism capable of passing through the pores of certain Berkefeld filters.

The significance of these experimental results is obvious; they go far to confirm the hypothesis advanced and maintained with so much courage and industry by Dr. Sambon. The investigations carried out by him during the last few years in Italy, Spain, France, Roumania, Transylvania, and Tyrol were undertaken at the suggestion of Mr. Wellcome, who has generously provided for the expense incurred. We are informed that Dr. Sambon will shortly go to the United States, in response to an invitation to join the Thompson McFadden Pellagra Commission, which is working in Spartenburg, South Carolina. After that he will proceed, by arrangement with Mr. Wellcome, to the West Indies, at the invitation through the Colonial Office of the Governments of Barbados and other West Indian colonies, to investigate the disease there.

It is unlikely that pellagra is anything but uncommon in this country. At the same time the fact that three cases have been discovered recently in a single family suggests the possibility that in certain districts it may be more common than at present seems probable. The disease is serious not only because it directly endangers life, but because an attack, as any one who studies Dr. Mott's observations will be led to expect, may be followed by extensive nervous degenerations. In districts where it prevails it is a frequent cause of dementia, and every asylum contains many of its victims in a condition of premature senile decay. In the acute and subacute attacks arsenic appears to be the most useful remedy, and if combined with early removal from the conditions and the locality in which the attack has developed the prognosis in the less severe cases seems not unfavourable. Recurrence is always to be feared and guarded against, but there is some evidence that a mild attack may produce a certain degree of immunity in the individual.

ABERDEEN, JULY, 1914.

At the quarterly meeting of the Council of the British Medical Association on July 2nd it was resolved to recommend the acceptance of the invitation of the Aberdeen Branch to hold the annual meeting of the British Medical Association in Aberdeen in 1914, and that Sir Alexander Ogston, K.C.V.O., M.D., should be chosen President-elect for the year 1913–14. In consenting to accept the unanimous nomination of the Aberdeen Branch, Sir Alexander Ogston has given great satisfaction to the members of that Branch, and this feeling will be shared by all members of the Association, for his reputation is worldwide, and in every part of the British Empire there are old pupils of his who look back to their student life with gratitude to him for his teaching and example. Though he has retired from active work in the Aberdeen Medical School, he retains his interest in its affairs. He is Emeritus Regius Professor of Surgery in the University of Aberdeen, and Consulting Surgeon to the Aberdeen Royal Infirmary. He is also Surgeon in Ordinary to His Majesty the King in Scotland.

THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS.

On the recommendation of the conservator, Professor A. Keith, it has been decided that the annual exhibition of specimens added to the museum of the College during the past twelve months shall be continued for three weeks, instead of being restricted to the latter days of the week on which the election of members of the Council are held. This arrangement is very advantageous and convenient, as since voting by papers has been granted there is no longer the crowd of Fellows and their friends who used to fill the museum and the library on the first Thursday in July. Now that the show of additions will be on view for three weeks, and will be held in the museum and hall of the College instead of in the council chamber, there will be ample time for visitors and students to become acquainted with the numerous novelties of interest which otherwise might have been completely overlooked. Mr. Shattock and Mr. Beadles, aided by members of the staff of many hospitals, have arranged not only a large number of additions, but also a great number of specimens already in the collection now classified according to the most advanced

ideas. Of the special series, only that illustrating diseases of the female organs has been permanently classified and furnished with a catalogue kept on the shelves of the museum for public use. But during the past twelve months Mr. Shattock and Mr. Beadles have steadily proceeded with the work of developing the series of general pathology now so conveniently arranged on the ground floor of the museum. The new and important series of infective processes and diseases, which has been incorporated in the collection illustrating general pathology, has occupied much time in its preparation and arrangement, and contains a large number of specimens illustrating diseases caused by micro-organisms and other parasites. Many pathological preparations associated with cases recently made public have been stored up on the shelves of the museum since last July. Among them is the skeleton showing progeria, contributed by Mr. Hastings Gilford, Sir B. Moynihan's example in which the oesophagus was united to the upper part of the small intestine, the patient surviving the excision of the stomach for nearly four years, and a hydrocephalic ancient Egyptian skull, described by Dr. Douglas Derry and presented by Professor Flinders Petrie. Mr. Mayo Robson has presented a collection of gall stones removed in the first series of operations which he carried out for their extraction. Dr. Wakelin Barratt has prepared and given to the museum some models illustrating the process of normal and abnormal division of the nucleus of the cell, which have a direct bearing on the problems relating to cancer. Mr. Albert Carless contributes an instructive preparation representing the pathology of ectopia vesicae and other specimens. Under the direction of Mr. Arthur Cheatle, Mr. J. F. Colyer, and Mr. Mayou, the aural, dental, and ophthalmic collections have been put into excellent order. Mr. B. H. Walton, through Sir John Tweedy, has given to the surgical instrument series a bag with a set of instruments formerly belonging to Sir William Fergusson. The medico-legal collection has been augmented by a set of cervical vertebrae showing fractures caused by official hangings. The teratological collection is enriched by some curious preparations demonstrating the effects of in-and-in breeding, and the physiology of pseudo-hermaphroditism. Under the superintendence of Professor Keith and the Physiological Curator Mr. Burne, the anatomical and physiological series have been enlarged by several unusually fine sets of preparations. Many of the dissections have been made by Mr. William Pearson, who has completed fifty-seven years of service, and others by Mr. H. C. Wilson, the assistant prosector, with the assistance of the foreman, Mr. Finerty. The conservator's annual report notes what a large number of papers dealing directly with work done or specimens prescribed in the museum have been published since the issue of the last report in 1912.

OBSTETRICAL FORCEPS.

THE catalogue of the obstetrical forceps in the Museum of the Royal College of Surgeons has been completed and already typewritten for use in the museum after the manner recently adopted in the pathological collection. This series includes about sixty forceps, solely such as are devised for the saving of the fetus, and the cephalotribes and cranioclasts will shortly be catalogued as a separate series. The greater number of the "saving" forceps belong to the loan collection of the Royal Society of Medicine, once constituting the museum of the Obstetrical Society of London. Several of the earliest post-Chamberlen forceps—Dusée's, Grégoire's, and Levret's—are represented, as well as Smellie's, in which the blades are broadest at the tips, which meet when the lock is closed. There is an instructive subseries of the instruments designed by Orme, Lowder, and Haighton, teachers in the United Borough Schools during the last thirty years of the eighteenth century. They are all short forceps; the blades are broadest at the base and do not meet when the lock is closed. Osborn's and Denman's follow. The former obstetrician endeavoured to make a light but not very long instrument with pelvic curve. Denman designed a straight forceps, also light; both his and Osborn's are broadest at the tips, like Smellie's, while, as in the Orme-Lowder type, the tips do not touch when the lock is closed. Dietrich Busch's forceps is represented; it is practically the same as the instrument of his father (Johann D. Busch), noteworthy as the first to bear the "finger-rests" for traction, often attributed to Naegele and Simpson, but described by J. D. Busch in 1796. Another subseries illustrates several instruments with a joint or screw on the right blade for facilitating its application. The forceps of the Hamiltons, of Conquest, and of David Davis are here represented. David Davis's remarkable set of forceps—symmetrical, unsymmetrical, jointed, and unjointed—intended for all kinds of emergencies, stand by themselves. In one the tip of the longer blade is made, by a complicated spring mechanism, worked from the lock, to bend over the fetal face in transverse vertex presentations; it bears a double leather lining with flannel sandwiched between the two layers, an arrangement positively repulsive to the aseptic obstetrician of the present day. Some of Davis's forceps had enormous fenestrae. Murphy, his successor, condemned the whole of them, and invented a forceps of his own, which is also represented in this collection. Radford's symmetrical and unsymmetrical blades are also to be seen, as are Assalini's and Lazarewitch's, with blades that do not cross, and Mursinna's, which bears Osiander's curious "block lock," a mechanism quite unlike the French, English, and German joints. There are as well numerous mid-nineteenth century forceps, many still in use, and most at least remembered. They show the manifold conscientious attempts made by obstetricians—successors to Smellie, Orme, and Denman—to find a compromise between traction power and compression power, lightness and strength. Amongst them is a Churchill's forceps, according to his original design, in which the fenestrae are limited to the upper part of the blades. Kristeller's remarkable dynamometrical forceps, quite a work of art, with brass fittings and slides and scales, and ebony mounts, has at least the merit of being conspicuous. The series stops short just before the traction forceps came into vogue. Aveling's forceps is included in the series, and, when inspecting it, let us remember that its inventor honestly expressed his opinion, when he first made it public, that it solved the traction problem, speaking incredulously at the same time, of M. Tarnier's ingenious invention, which seemed to him hardly likely to come into general use.

GHOSTS AND GAS.

MAN, in spite of our boasted progress in knowledge, is still almost as full of superstition as he was when he walked encompassed by evil spirits who threatened him in every act of his life. The investigation of ghost stories is still regarded by many persons of fair understanding as a matter worthy of serious attention, and not a few people who pass for strong minded would find an excuse for not passing a night in a haunted house. Everyone knows the description in the *Professor at the Breakfast Table* of the creakings, and crackings, and sounds of all kinds heard "when you are lying in bed in a lone attic of a dark night." These will often play such a devil's sonata, even on the nerves of the sceptic, that his philosophy will desert him, and he will mutter, like the professor's friend, *Pater noster, qui es in coelis!* for he is "damp and cold, and sitting bolt upright, and the bed trembling so that the death-watch is frightened and has stopped ticking!" An instructive story is told in our American contemporary *Science* for May 9th by Dr. Franz Schneider, junior, of the

Department of Biology and Public Health, Massachusetts Institute of Technology. He was invited to examine a large and handsome house in Boston, which was getting a reputation of being haunted. He localized the trouble in the third and fourth stories, which were occupied by the children and servants. Their sleep was disturbed by strange sensations. The servants awoke in the night with a feeling of oppression, "as if some one were tapping on me," or with a "creepy feeling going all over me with a feeling of being paralysed." Sounds as of some one walking about the house were also heard. These sensations often continued after the sleeper was thoroughly awake, and even after the lights had been turned on. The children complained of people lying on them, and of strange men frightening away sleep from their pillows. They looked pale and sluggish in the morning, and did not respond to the stimulus of cold water. These things, which were often repeated, had extended over the period of about two months during which the family had occupied the house. Former tenants had suffered in the same way, and it was said walking apparitions had been seen. The solution of the problem was prosaically simple. Dr. Schneider found that the large amount of "furnace" gas escaping from a viciously defective hot-air furnace was the source of the ghostly visitations. In consequence the dwellers in the house were bathed in an atmosphere of diluted flue gases. To make matters worse, a small boiler for a steam heating system had been placed within the firebox directly over the fire, the effect being to cool the top of the fire and so promote incomplete combustion. Flue gases, especially when combustion is incomplete, contain considerable amounts of sulphurous oxide and carbon monoxide. Furnace gas was diffused in the house, and was often so strong that the eyes watered and an appreciable effect was felt in the throat—symptoms at once suggestive of sulphur. For the most serious symptoms the carbon monoxide was responsible. The feelings of oppression and other mental disturbances are typical of the more acute forms of poisoning with this gas, while anaemia, malnutrition, loss of psychic powers, and diminished vigour are characteristic of a chronic condition. It seems probable that the belief in walking spirits was encouraged by real noises coming from an adjoining house. Any such noises would be likely to be exaggerated in the case of persons startled out of sleep in the night while suffering from the effects of carbon monoxide. The tainted atmosphere was sufficient to cause creepy sensations and delusions of ghosts. We commend this story of the successful "smelling out" (in a literal sense) of spooks to the attention of the Society of Psychical Research.

THE ADVISER TO THE GOVERNMENT OF CHINA.

WE have repeatedly called attention to the large part played in the government of our colonies by medical administrators. One of the ablest of these is Sir William McGregor, Governor of Queensland, who has had exceptional experience as a colonial administrator. Another doctor who has gained a position of vast influence and responsibility in a great empire is Dr. George Ernest Morrison, a native of Australia and a graduate of Edinburgh. After earning distinction as a journalist as Peking correspondent of the *Times*, he was last year appointed Political Adviser to the President of the Chinese Republic. We learn from the *Australasian Medical Gazette* of May 24th that a letter of congratulation was recently forwarded to Dr. Morrison by the Australian Chinese Association, and that the President of the Association (Mr. Yinson Lee) received the following reply from him: "It is indeed gratifying to me to learn that my appointment has met with the approval of my fellow citizens in Australia. I only hope I will be able to do work that will justify my appointment. I have taken up my new work full of confidence in the future of China. In the course of the last few years I have visited every province in her vast territory except Tibet. It is impossible to travel in the interior and to witness the amazing resources of the country and the energy and industry of the people, and not to be inspired with confidence in the future. When, in the course of time I return to Australia, I trust that I shall be able to feel that I have done something, however small, in assisting in the development of a country in which the best part of my life has now been spent, and for whose people I have entertained the warmest feelings of respect and friendship." We are proud to claim Dr. Morrison as a member of the medical profession, and we have no doubt that he will be able to accomplish much in shaping the future destinies of China.

STENCH AND SENTIMENT.

THE French memoirs of the seventeenth and eighteenth centuries are full of disgusting details of the insanitary state of Paris, including the Louvre itself. The palace of the French kings was open to the public more freely than the White House at Washington is to the citizens of the great Republic of the West. Taking into account the fact that the customs of the French people, as of most other nations in the good old days, were filthier in some respects than those of primitive man, the state of the dwelling of the sovereign may easily be imagined. The sovereign and his suite, who were constantly swallowing purges and taking enemas, used nightstools, with the result that the atmosphere was such as only Swift could describe. Visitors to the palace relieved nature openly in the courtyards and even on the stairs, in defiance of ordinances doubtless prompted by some sudden sensitiveness of the royal nose. The mere reading about these things almost makes a modern reader sick. But probably among those to the manner born it caused no inconvenience, and the recollection of the stenches of the Louvre and Versailles in later days were even associated in loyal breasts with tender feelings of regret for the past. The famous architect Viollet-le-Duc says that even in the unsavoury details that have been referred to the old tradition was revived at the Restoration. He remembered the stenches which pervaded the corridors of Saint Cloud in the days of Louis XVIII. One day when a mere boy he visited the palace at Versailles in the company of an elderly lady who had been an ornament of the court of Louis XV. In going about they found their way into a passage where their nostrils were assailed by the foulest odours. The old lady inhaled these with the deepest pleasure, exclaiming rapturously, "*Ah! cela me rappelle un bien beau temps!*" It is well known that the olfactory nerve often retains impressions more vividly than any of the other senses; hence the smell of a flower will call up in an old man the memory of a scene of youthful love or awaken forgotten associations. It is natural enough, therefore, that a once familiar stench should bring back a vanished past. But an old court beauty finding food for a fine sentiment in a stink is what Carlyle would call a comico-pathetic figure.

THE CAMBRIDGE RESEARCH HOSPITAL.

THE Treasurers of the Cambridge Research Hospital have received a sum of £300 from Mr. G. Bidder, of Cambridge, for the purchase of an additional acre of land. Mr. J. H. Wills, of Chiddingstone Castle, Kent, has also promised £300 for current expenses. The objects of the hospital, the work it has done, and the recent extension of its scope, have on several occasions been set forth in the BRITISH MEDICAL JOURNAL, but we may briefly remind our readers that it is under the direction of a Committee for

the Study of Special Diseases, among the members of which are Sir Clifford Allbutt, Sir Richard Douglas Powell, Sir Thomas Barlow, Sir William Church, Sir Henry Morris, and Sir W. Watson Cheyne. The treasurers of the Committee are Sir William Church, Sir Clifford Allbutt, Professor Sims Woodhead, and Mr. T. S. Strangeways, Lecturer in Special Pathology in the University of Cambridge, who was justly described by Sir Clifford Allbutt at the opening of the new hospital as "the heart and soul of the institution." The hospital is intended for the investigation of chronic diseases, such as rheumatoid arthritis, and a large number of observations has already been published. The work of the institution has from the beginning been hampered by want of funds, and, although it has been greatly helped by the munificence of benefactors, particularly Dr. R. C. Brown, of Preston, it is to be hoped that further support will be forthcoming. The objects of the hospital should appeal with special force to the medical profession, for it exists for the discovery of means of relieving a class of diseases which are a source of great suffering to patients and of corresponding anxiety to doctors.

AUSTRALIAN INSTITUTE OF TROPICAL MEDICINE.

THE Australian Institute of Tropical Medicine at Townsville, Queensland, was opened by the Governor, Sir William McGregor, on June 28th, and on June 30th Sir Ronald Ross received the following telegram: "Have opened Australian Institute Tropical Medicine and join staff in sending you greetings—McGregor." The institute, which has received generous financial support from the Commonwealth Government, was started in 1909 to further the scientific study of the diseases peculiar to tropical Australia, and to afford opportunities for the training of medical men in this department of medicine. In the following year Dr. Breinl, of the Liverpool School of Tropical Medicine, who had been appointed Director, arrived at Townsville, and the organization of the institute has since proceeded apace. It is under the general control of a committee appointed by the universities of Sydney, Melbourne, Adelaide, and the Government. The committee of the Townsville General Hospital maintains in its wards, free of charge, patients under special observation, and gives to the Director and his assistant every facility for clinical investigation.

THE LATE SIR JONATHAN HUTCHINSON.

AT the meeting of the Council of the British Medical Association on July 2nd a resolution was adopted, all the members standing, expressing the Council's deep sense of the loss which the medical profession has sustained by the death of Sir Jonathan Hutchinson, F.R.C.S., F.R.S. The resolution recorded that during his long and busy life he showed in many ways his interest in the British Medical Association. He had been for a time Editor of its JOURNAL; he had been the moving spirit in the institution, at Oxford in 1868, of the Pathological Museum which now forms so valuable a part of the annual meetings of the Association; he had been President of the Section of Surgery in 1876, and of that of Dermatology in 1890, and had delivered the Address in Surgery in 1881 and again in 1895. The Council desired to assure the family of Sir Jonathan Hutchinson that in expressing its own regret and sympathy, it at the same time expressed the unanimous feeling of every member of the British Medical Association.

THE OXFORD OPHTHALMOLOGICAL CONGRESS.

As already announced, the Oxford Ophthalmological Congress for 1913 will begin at Keble College, Oxford, on Thursday, July 17th, and on the previous evening the members will dine together informally in the hall of the college. On the afternoon of July 17th cases will be exhibited and operations demonstrated at the Eye Hospital, and the official dinner of the Congress will take place at Keble College that evening under the chairmanship of Sir William Osler. A discussion on the present position of ophthalmology will be opened on the afternoon of Friday, July 18th, at the Eye Hospital, by the Master of the Congress, Mr. R. W. Doyne. Afterwards tea will be taken in the gardens of Worcester College, and in the evening there will be a smoking concert at Keble College. During the course of the Congress addresses will be given by Professor Emil von Grósz (Budapest), on the methods of cataract extraction practised in the Royal Hungarian University Eye Hospital, No. 1, Budapest; by Dr. John O. McReynolds (Dallas, Texas), on the nature and treatment of pterygium; by Dr. J. Igersheimer (Halle), upon recent investigations of inherited syphilis of the eye; by Lieutenant-Colonel R. H. Elliot (Madras), on trephining in glaucoma, acute and chronic; by Dr. J. W. Mawas (Paris), on the pathogeny and pathological anatomy of retinitis albuminurica; by Dr. Franz Deutschmann (Hamburg), on the pathogenesis of sympathetic ophthalmitis; by Mr. N. C. Ridley (Leicester), on plastic operations about the eye; by Dr. T. Harrison Butler (Leamington Spa), on the operative treatment of trichiasis; and by Dr. F. W. Edridge-Green (London), on new facts illustrating the theory of vision. A scientific and commercial museum will be open in the Department of Physiology on the mornings of July 17th and July 18th. Further particulars can be obtained on application to the Secretary of the Congress, Mr. Sydney Stephenson, at 33, Welbeck Street, London, W.

THE SUPPLEMENT.

OWING to the length of the Supplementary Report of Council dealing with matters of great importance to the Association and to the publication of the text of the National Insurance Act (1911) Amendment Bill, with explanatory comments, the SUPPLEMENT for this week is of unusual dimensions. In spite of this increase in the bulk of the SUPPLEMENT it has been necessary to carry over the reports of a number of meetings of Branches and Divisions of the Association and of Local Medical Committees to a later issue.

THE Chelsea Hospital for Women has received from the Drapers' Company a promise of £500 towards its rebuilding fund for the current year and of a similar amount for 1914. A bed will be endowed in the name of the Company.

THE Hampstead General and North-West London Hospital has received the motor ambulance so kindly offered to the institution by the President, H.I.H. the Grand Duke Michael. In co-operation with the London County Council, which is contributing to the cost of maintenance and arranging for special telephone facilities, the ambulance will be available for street accidents in North-West London. It will be, we believe, the first motor ambulance for this purpose operating in the metropolitan area outside the City of London.

OWING to the facilities provided by a wealthy and generous Indian gentleman, Seth Hiranand, Dr. H. T. Holland and his colleagues who are stationed at Quetta, where there is a regular hospital in connexion with the Church Missionary Society, have been invited to spend a few weeks each year at Shikarpur, Sindh. The account which Dr. Holland gives of one day's work at this place is worth recording. There were 480 out-patients with 123 operations, of which 74 were for cataract. Dr. Holland and his colleagues, Dr. Somerton Clark and Dr. V. H. Starr, commenced operating at 8.45 a.m., and continued operating until nearly 3 p.m., when they had done over 80 operations. Between 3.45 and 6.30 p.m. they did the remainder of their operating work, their only assistants being one nurse, one compounder, and three dressers. It is hoped that the society may obtain funds to enable it to carry on permanent work at Shikarpur.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

National Insurance Act Amendment Bill.—It is currently reported that the second reading of this bill will probably be taken at the end of next week or on Monday or Tuesday, July 14th and 15th, and it is said that the bill will be sent to Standing Committee C, under the chairmanship of the Right Hon. H. W. Wilson.

Mental Deficiency Bill.

The Committee on the Mental Deficiency Bill met on Thursday, June 26th, and on Tuesday, July 1st.

On June 26th, when Clauses 20 to 25 were added to the bill, the greater part of the time of the Committee was occupied in discussing a large number of amendments put down by Mr. Martin to Clause 20, which deals with the establishment of the Commissioners. The principal amendments were directed to avoiding the sharing of responsibility between the Secretary of State and the Lord Chancellor and making the Secretary of State more directly responsible. The legal Commissioners are to be appointed by the Lord Chancellor alone, and the other Commissioners and the Chairman by the Secretary of State alone, the consultation of the Secretary of State with the Lord Chancellor, as required in the bill, being deleted.

Clause 21 was amended by providing that the various inspectors and other officers and servants of the Commission shall include women as well as men.

Clause 23 was amended to secure that mental defectives who speak Welsh only shall be in the care of others who can speak their own language.

It was also provided that the Commissioners may make such efforts as may be necessary to provide suitable treatment for the mentally defective, and a further amendment to Clause 23 requires that at least one of the Commissioners shall visit every certified institution, certified house, or approved home once a year and inspect those committed to them. It was also provided that each of these places shall be visited at least one other time every year, and that every defective under guardianship shall be visited at least twice a year. The two last groups may be visited either by the Commissioners or by their inspectors.

To Clause 25, which provides that the county councils and the county borough councils shall be the local authorities under the Act, an amendment was proposed to constitute the Common Council of the City of London as an authority for the City. After a short discussion it was rejected by the Committee without a division.

The Committee on July 1st dealt with Clauses 26 to 41, except that the financial provisions were held over and, after considerable discussion, Clause 35 was withdrawn for redrafting.

On Clause 26, which determines the committees to be set up by local authorities to have care of the mentally defective, it was provided, on the motion of Mr. Goldsmith, that the majority of the committee should consist of members of the Council; and an amendment was carried by Mr. Dickinson which provided that the words "some shall be women" should take the place of the proposal in the clause with respect to the persons appointed on the committee that "one at least shall be a woman." No other material amendments were made, with the exception of a small but valuable addition which will enable measures to be taken to aid in the securing of improved methods of diagnosis and treatment.

A prolonged discusson took place on Clause 35, which provides that on the application of a board of guardians the Board of Control may, subject to the consent of the Local Government Board, approve buildings or other premises provided singly or jointly by boards of guardians for the reception and care of the mentally defective, and that boards of guardians may enter into agreements with local authorities for the reception and maintenance in them of defectives, subject to the approval of the Local Government Board. The proposal was strongly opposed on the ground that mentally defective children should be wholly removed from workhouses and from the Poor Law authority, and that it should not be possible to have buildings approved on the application of a board of guardians only. Mr. Ellis-Griffiths consented, on the part of the Government, that the application should be a joint one by the local authority and of the board of guardians. He said at the same time that it was desirable not to lose the use of existing institutions which were of a proper character. Ultimately the clause was withdrawn for redrafting, to meet the criticisms of the Committee.

Mental Deficiency Bill (Scotland).—On June 27th, after the debate on the appointment of a Committee to consider the proceedings of the House, the debate on the second reading of this bill was resumed and concluded, and the bill was finally agreed to without a division. With the exception of Mr. Wedgwood, those who took part in the debate were generally friendly to the bill, though many members had important and useful criticisms to make, especially with regard to the securing of the rights of parents of defectives and to the authority set up by the bill. In this latter respect, Sir Henry Craik contended that the arrangements provided in the English bill were preferable to those in the Scottish bill. In the English bill every local authority is required to constitute a special committee for the care of the mentally defective, which shall contain persons having knowledge and experience in this matter, and some of them must be women. In the Scottish bill the School Boards of each district are given authority in this matter, and Sir Henry Craik contended that their proper function was educational, and that they were not properly fitted to deal with matters of this kind; that there was no guarantee that women should be members of the board, as ought to be the case, nor was it provided that any of the members should have special knowledge or experience in this matter. His contention received support from other members, and Mr. Duncan Millar pointed out the great importance of providing that the asylums officers should be properly provided for under the bill in regard to superannuation. He referred to the grievances to which many of these officers at present were subject, and contended that the present opportunity should be made use of to provide a remedy. The bill was read a second time.

Elementary Education (Defective and Epileptic Children) Bill.—The debate on the second reading of this bill was begun on June 27th, after the second reading of the Scottish Mental Deficiency Bill. In introducing the bill, the President of the Board of Education, Mr. Pease, said that it was an essential preliminary to dealing successfully with the problem of the feeble-minded that the local educational authorities, by the provision of special schools, should be enabled to secure that all doubtful cases of feeble-minded children had an opportunity of being properly diagnosed; secondly, of determining which of them were educable and which were not; and, thirdly, of providing industrial and manual training suitable to their capacities, and to train them in habits of good conduct and self control. He said that 176 authorities had already taken some steps in connexion with a special school service of this kind; that 52 maintained schools of their own; that 173 of them contributed to the support of schools already established, and that in 100 cases contributions were made to special schools situated in areas outside their own. He said that about 12,000 children were already being provided for in this way, and he thought that there were about 12,000 more who needed similar provision. In respect of the day schools, it was proposed to increase the Treasury grant from £4 4s. to £6 a head, and, in the case of the residential schools, to double the grant of £6, making it £12. This would mean that in the course of two or three years the contribution from the Board of Education to local authorities in respect of these children would be increased from £45,000 to £200,000 a year. He stated his desire to meet all reasonable objections, especially in regard to securing proper recognition of the legitimate rights of parents, whose confidence it was essential to secure and to maintain. The rejection of the bill was moved by Mr. Goldsmith, who contended that the schools proposed to be set up were not of a suitable character in many respects;

that it would mean a duplication of authorities, and that the financial provision was insufficient. He also contended that the results of the training in the existing special schools, as quoted by the President of the Board of Education, to the effect that nearly half the boys and girls were so trained that they could, and did, obtain good and promising employment, was unduly optimistic, and that the results in Liverpool and other places did not justify so sanguine an anticipation. The debate was interrupted at 5 o'clock under the Standing Orders, and was adjourned.

Dogs (Protection) Bill.—The Committee on this bill was continued on July 2nd. The resolute opposition offered by Dr. Chapple, Sir Philip Magnus, Sir Henry Craik, and other members of the Committee was maintained. After a long discussion the word "inoculation" was inserted before the word "experiment" in the second line, the amendment being carried by two votes. The effect of this amendment is to limit the prohibition solely to inoculation experiments. After lunch no quorum was obtained, and the Committee adjourned to Wednesday, July 9th. Less than two lines of the bill have been obtained so far, and in view of the lateness of the session it may fairly be assumed that for all practical purposes the bill is dead.

Vivisection.—Mr. Lynch asked whether the Home Secretary could state the number of establishments in this country licensed for vivisection purposes or for research work involving experiments on living animals; how many persons were now in possession of licences and certificates authorizing them to perform such experiments; how many dogs were employed for this purpose during 1912; what proportion this bore to the total number of animals so employed; and when the annual return of vivisection experiments would be published.—Mr. McKenna said that the total number of registered places in Great Britain was 109. The number of persons holding licences was 568. Most of the holders of licences also held one or more certificates. The total number of experiments performed during 1912 was 83,559. He could not give the exact number of experiments on dogs—888 experiments were performed under the certificates which allow experiments on dogs or cats, but the returns did not show how many were on either kind of animal. In addition to these, some of the 2,584 experiments performed under licence only, without certificate, might have been experiments on dogs. The annual return was almost ready for publication, and would, he hoped, be issued shortly.

Colour Vision Tests.—In answer to questions from Captain O'Neill, Mr. John Ward, and Mr. Lynch, the President of the Board of Trade stated that he was aware of the facts concerning the second mate of the steamship *Star of India*. That officer had passed the eyesight test in October, 1912, but failed in the colour tests on April 4th. This was owing to the introduction of the lantern test, and had he presented himself a fortnight earlier, when this test was not in use, he would have been regarded as efficient, and been able to remain for years in a service which he would now be compelled to leave. The lantern tests had been made obligatory on the advice of the committee appointed in 1910, and it was the duty of the Board to ensure as far as possible that no man whose colour vision was defective should serve as a watch-keeping officer at sea. He sympathized with such cases, and it was a question for consideration whether anything could be done to find employment for the persons affected. It was not a fact that the shades between green and blue in the lantern used were so fine that it was difficult for ordinary persons to decide which colour was which. The case did not demonstrate that the lantern test was the sole reliable test or the only one that should be used in the public interest, but it did show that it was a most important test. It was, however, desirable to have several concurrent tests.

Bacteriology of Milk.—Dr. Chapple asked the President of the Board of Agriculture if, in view of the admission of some of the veterinary officers under the Tuberculosis Order, 1913, that they were unfamiliar with the microscopic appearance and method of identification of the bacillus of tubercle, he would give the names of the various schools throughout the kingdom where short courses on the bacteriology of milk in connexion with the Tuberculosis Order are given.—Mr. Runciman said that he was informed that special classes in connexion with the Tuberculosis Order were held at the Royal Veterinary College, London, and at the University of Liverpool. Arrangements were also being made for similar classes at the Veterinary College, Glasgow.

Lead Compounds (Departmental Committee).—In reply to Mr. Agg-Gardner, the Home Secretary said that the Chairman of the Departmental Committee appointed to inquire into the use of lead compounds informed him that the Committee had now completed the taking of evidence, which had been very voluminous, and was engaged in considering it. He was unable to say definitely when the report would be ready, but it would be presented at the earliest possible moment.

England and Wales.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

LONDON.

London County Council.

Medical and Dental Treatment of School Children.

As the agreements with the authorities of 12 hospitals, 21 school treatment centres, and 1 ringworm school for the treatment of the ailments of London school children expire on July 31st, the Children's Care Subcommittee submitted to the Education Committee of the London County Council on July 2nd proposals for the year beginning August 1st, 1913.

It was proposed that provision should be made for the treatment of 83,998 defects, as compared with 76,138 last year, or, excluding minor ailments, of 71,678 defects, against 65,798 last year—a net increase of 7,900. The subcommittee stated that experience had shown that the number of throat defects was now less than in previous years, despite the fact that the range of inspection was more complete. It was therefore proposed to reduce the number of such cases in drawing up the new agreements.

In several cases, heavy initial charges having been met, the subcommittee proposed that the capitation payment of 2s. should be made on the first 1,000 cases only. The existing agreements should be renewed in the case of the following: Charing Cross, Metropolitan Ear, Nose, and Throat, Metropolitan, Miller, Poplar, Queen's, Royal Eye, Royal London Ophthalmic, and St. Mary's (Paddington) Hospitals, and with the committees of the Home and Infirmary for Sick Children (Sydenham), St. Marylebone Dispensary, and St. Cecilia's and Woolwich (Dental) School Treatment Centres. Renewals subject to modifications in the number of cases to be dealt with were recommended in the following cases:

Belgrave Hospital for Children, London Hospital, the Marylebone, Rotherhithe, and Shoreditch Nursing Treatment Centres, Deptford Children's Health Centre, the St. George's Dispensary, St. George's Mission, St. Mary's Ringworm School, Women's Hospital for Children, and the following school treatment centres: Fulham, Hackney, Hammersmith, Islington, Norwood, Peckham, Poplar, St. Pancras, and Wandsworth.

The subcommittee did not propose to renew the agreement with the governing body of the Woolwich and Plumstead Cottage Hospital, but suggested the establishment of the school treatment centre under the direction of a committee of local practitioners in a more central position in Woolwich. It recommended also that facilities for the dental treatment of children should be provided in Westminster at the Western Dispensary, and at the Hackney and South London Treatment Centres and the London Hospital. The number of dental cases to be treated at each centre should be 1,540.

The Education Committee approved the whole of these proposals.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

TUBERCULOSIS ARRANGEMENTS IN EDINBURGH.

IN connexion with the decision of the Town Council of Edinburgh, referred to in last week's issue (see p. 1390), respecting the tuberculosis arrangements for the city, there has been, as was inevitable, a good deal of criticism. Thus the Town Council and the Burgh Insurance Committee are blamed by some for not taking over the Royal Victoria Hospital and Dispensary, which have been regarded elsewhere as a pattern worthy of imitation, and they have been reproached with preparing a "patchwork scheme" of their own. It has even been stated that if no agreement can be come to with the Royal Victoria Dispensary the Town Council is ready to build a dispensary of its own, but this is a matter upon which it is safe to say that the ratepayers will demand to be heard. The warrant of the Astor Report was freely referred to in the discussions, but it seems to have been forgotten that one of the recommendations of that report was that existing institutions should be made use of in local schemes wherever possible; the Royal Victoria Dispensary, say the critics, is such an existing institution. The Town Council is blamed also for proposing to crowd all the tuberculosis cases into the City Hospital at Colinton Mains, when they might be grouped according to the stage of the disease reached, and the Royal Victoria Hospital and Farm Colony utilized for the earlier ones and for those requiring prolonged supervision respectively; the later cases could then be sent to Colinton Mains. Again, from another direction, criticism of the scheme has come; the medical profession, with almost complete unanimity, has condemned the placing of the clinical side of tuberculosis under the public health officials, as was clearly indicated in our columns last week (see p. 1389), but the protest, if one may judge from the debate in the Town Council meeting, does not appear to have had much, or indeed any, effect.

Sir Alexander Christison, Bart., the President of the Royal Victoria Hospital for Consumption, in a letter which was published in the *Scotsman* on June 26th, has made known the proposed heads of agreement submitted by the city, and the replies made to them by the committee of the hospital. These proposed heads number six in all, but most interest attaches to the replies to the council's suggestions on two—namely, that the dispensary's functions should be limited to the giving of dispensary treatment, including medicines, to such persons as may be sent to the dispensary, and that the existing agreement by which the corporation has ten beds at its disposal in the Royal Victoria Hospital should be brought to an end. On both these subjects the directors of the hospital take a different view from the Town Council; they deprecate the limitation of the dispensary's uses, and they regret the departure from the arrangement concluded many years ago between successive conveners of the Public Health Committee and themselves, to the effect that a certain proportion of the cases of tuberculosis ocurring in the city should be treated in the Royal Victoria Hospital. Whether or not these criticisms will have any effect upon the arrangements accepted by the Town Council remains to be seen; but, at the same time, it is not to be denied that a forward step of great importance has been taken in the municipal treatment of tuberculosis.

JOINT TUBERCULOSIS SANATORIUM FOR THE SOUTH-EASTERN COUNTIES OF SCOTLAND.

Reference has already been made (vide JOURNAL for June 28th, p. 1391) to the negotiations going on for the establishment of a combined tuberculosis sanatorium for the South-Eastern Counties of Scotland; and a further step was taken in the matter on June 25th, when the Midlothian County Council, at a special meeting, unanimously accepted the draft scheme. The counties included under the geographical designation of south-eastern are Berwick, Haddington, Linlithgow, Midlothian, Peebles, Roxburgh, and Selkirk. The draft agreement now goes to the Local Government Board for discussion; there are nine proposals in the scheme, and to these as finally adjusted reference will be made later.

QUEEN MARY'S NURSING HOME, EDINBURGH.

The new nursing home in Edinburgh for patients of limited means, to which reference was made in these pages a few weeks ago (May 31st, p. 1185), is to be known in future as "Queen Mary's Nursing Home," and is to be under the patronage of Her Majesty the Queen. These are the tidings contained in a letter to Dr. Chalmers Watson from Her Majesty's private secretary, bearing the date June 24th.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

EMIGRATION FROM IRELAND.

FROM the Registrar-General's returns it appears that during the month of May the number of emigrants (natives of Ireland) who left Irish ports was 6,069, as compared with 4,720 in the same month last year, an increase of 1,349. For the first five months of the present year Irish emigrants numbered 15,961, as against 14,070 in the same period last year, a total increase of 1,891; of this increase Ulster was responsible for 1,091. As pointed out recently, there has been a steady decline in the number of emigrants for many years past, but now this has changed to a steady increase.

HOSPITAL ACCOMMODATION IN ROSCOMMON.

At the last meeting of the Roscommon Board of Guardians a letter was read from the Local Government Board, stating that, owing to the additional work arising in connexion with the sanatorium provisions of the Insurance Act, it had found it necessary to increase the number and rearrange the duties of their staff of medical officers' inspectors. They had accordingly appointed Dr. Florence Dillon assistant temporary medical inspector of the union infirmary and hospital for Roscommon Union. Dr. Dillon would be required to make inquiries on the subject of infant mortality in the workhouse, and also to inspect the children's and female wards.

DISTRICT COUNCIL AND MEDICAL OFFICER.

The Stranorlar Rural District Council, by its action in refusing the request of its medical officer for a bonus for extra work, has shown that it does not think him worthy of the same consideration as the sanitary subofficer. Dr. Johnston, who has had almost forty years' service, during which time all his applications for an increase of salary have been refused, recently had an outbreak of typhus fever in his district which involved a great deal of extra work, including even the putting of those who died into their coffins, as nobody else could be got to do it. Seeing that the sanitary subofficer had been granted a bonus of £2 for his extra work, Dr. Johnston applied to the rural district council for a bonus, which was refused. He then wrote to the Local Government Board, which informed the council that the medical inspector had reported that a large amount of additional work had been thrown upon Dr. Johnston, that he had certainly not spared himself, had incurred considerable personal risk in attending the cases, and that his request ought to be acceded to. At the last meeting of the council, when the letter was considered, a proposal was made to give Dr. Johnston a bonus of £5; this was amended to 3 guineas. One of the councillors pointed out that Dr. Johnston had undertaken all the work himself instead of asking for extra medical assistance, which would have meant extra expense to the ratepayers. On a vote being taken, 6 voted for granting a bonus, and 8 against.

India.

[FROM OUR SPECIAL CORRESPONDENT.]

KASHMIR MISSION HOSPITAL.

SOME interesting glimpses of life in Kashmir are supplied by the report for the year 1912 of the Mission Hospital in that country, while for those whose personal experience enables them to read between the lines there is plenty to suggest how great an amount of enduring energy, enthusiasm, and patient skill must be necessitated

by the undertaking. It involves seemingly three more or less distinct enterprises—visiting and preaching in as many localities of Kashmir as possible, the charge of a State leper hospital, and the working of a hospital provided with both in-patient and out-patient departments. Apart from minor surgery, the year's operations included 1,170 eye cases, the removal of over 500 tumours, some 400 miscellaneous operations including laparotomies and various ear, nose, and throat procedures, and 530 operations on bones and joints. Taking the whole of the operations as a total of 5,000, the mortality was only about 0.5 per cent. Of the tumour operations, 92 were for the removal of "kangri" cancers. Conservative surgery, it is pointed out, has to be pushed to the utmost limits owing to the intense prejudice of the people of the country against amputations. Owing to the great prevalence of chronic ophthalmia, eye operations have usually to be preceded by long preliminary treatment, and an investigation of the bacteriological condition of the conjunctival sac. The annual cost of a bed is put down as only £10; some two-thirds of those in use are supported personally by various friends of the mission, and the year's work seemingly ended with a small balance in hand. On this, as on many other facts revealed in the report, Dr. Arthur Neve and his colleagues and assistants are greatly to be congratulated. The interest of future reports would be much increased by a succinct summary of the history of the mission, since its commencement, of its scope, and of the size of the hospital maintained.

A New Medical Society.

A preliminary meeting of medical men was held in Rajkot in April to consider the question of the formation of a medical association for Kathiawar, and it was unanimously decided that there was a real need for an organization of this nature. Those present then agreed to inaugurate a society, to be called the Kathiawar Medical Society, and a committee was thereupon elected, with Major Hooton, I.M.S., as president, and entrusted with the framing of draft rules and regulations to be submitted for approval at the first regular meeting of the society. It is proposed to hold quarterly meetings, at which cases may be shown and papers read, and also to establish a circulating library and reading-room in Rajkot.

King George V Antituberculosis League, Bombay.

The scheme represented by this title arose from a desire to commemmorate the King's visit to India. Mr. Ratan Tata, a prominent citizen of Bombay, suggested for this purpose the organization of a campaign against tuberculosis, and offered under certain conditions to contribute Rs. 150,000 to this end. Lord Sydenham, the Governor of Bombay, expressed his warm approval of the movement, the Municipal Corporation of Bombay promised support, and the scheme was launched at a public meeting. The secretarial work was undertaken by Drs. Turner and Choksy, who have now issued a prospectus in which the objects aimed at by the league are defined to be: (1) Notification of disease; (2) tuberculosis dispensaries; (3) education of the people; (4) medical inspection of school children; (5) supervision of milk and food supplies; (6) a special fund to relieve distress; and (7) to arouse public interest in tuberculosis. A central dispensary and laboratory have already been established, with a medical man and nurse to treat tuberculous cases, and it is proposed to organize eleven others in the town and, as the scheme develops, to open tuberculosis departments at some of the existing municipal dispensaries. It only remains for the Bombay public to respond to this most commendable proposal by contributing generously to an excellent undertaking.

The Cocaine Traffic in Bombay.

The Bombay Government states that there is no evidence as yet that the change in the law has put a check on the operations of the illicit importers. The cocaine habit appears to be extending, and unless concerted measures are taken to cut off the supply of the drug at its source in Europe it is not possible for a preventive staff at Bombay to do more than put, from time to time, a temporary check on the nefarious traffic.

Special Correspondence.

BERLIN.

Drug Advertisements in German Medical Journals.—The Spirochaete in General Paralysis of the Insane.—The Radio-therapy of Carcinoma Uteri and of Uterine Myoma.—The X-ray Treatment of Fibroids.

The police regulations of 1912, for the district of Berlin, prohibit the public advertisement of drugs and proprietary medicines, the sale of which, unless absolutely harmless, is only permitted to chemists and drug stores. They did not specify that scientific journals were exempt from this regulation, and a medical editor was recently prosecuted and fined for allowing the insertion in his supplement of an advertisement for an anteconceptional preparation, although the wording of it was admittedly in medical terms. The result of this "test" case has aroused an animated discussion as to what constitutes an advertisement, and to what extent the promulgation to the medical profession of therapeutic advances should be legally authorized. The regulation applies only to the Berlin area, but it is not difficult to foresee that evil consequences might ensue from its general adoption. Nearly all the supplementary pages of German medical journals are filled with drug advertisements, and in a considerable majority are the main source of income, and therefore of their existence. Moreover, the main channel of information from the commercial laboratory to the physician would be closed, and many valuable adjuncts in pharmacy remain unknown to him. The injustice of such a position to all concerned is sufficiently obvious, and it is hoped that common sense will prevail and force the withdrawal or amendment of this measure. On the other hand, it cannot be gainsaid that those responsible for it had in mind the alleviation of a public nuisance. The market has been flooded with chemical products, which under high-sounding names profess to cure not only symptoms but the diseases themselves, and the overworked practitioner is obviously not in a position to separate the good from the bad. The subject was thoroughly discussed at a medical congress in Wiesbaden, with the fruitful result that a permanent drug commission was appointed, whose function it is to examine into and test experimentally the claims of the preparations and secret remedies advertised in the medical journals. The results of its labours are sent annually to the profession for guidance, and have proved not only useful to them, but, above all, most salutary in their restraining influence on the commercial chemist.

Professor Noguchi's discovery of spirochaetes in the cortex cerebri of general paralytics was reported in the British Medical Journal last March (p. 464). Considerable interest was aroused at the last meeting of the Berlin Medical Society by a communication, which had the honour to be read by Professor Wassermann, from Professor Marinesco of Bucharest. It stated that in 26 cases of general paralysis of the insane he had twice succeeded in demonstrating the spirochaete in the cortex, more especially in the neighbourhood of the cerebral vessels, and that one of these cases had suffered from syphilitic meningitis. Marinesco ascribes the apparent rarity of their presence in his cases to his own faulty technique, and voices the opinion that in general paralysis of the insane we are face to face with the result of the direct action of the spirochaete on the cells of the brain cortex. The failure of specific therapy in these cases is probably due, he thinks, to a special affinity of the organisms for nervous tissue. A most important observation on this subject was contributed by Forster and Tomaszewski (of the Charité Hospital in Berlin) to the *Deutsche medizinische Wochenschrift* of June 26th. Not content with *post-mortem* material, they undertook the method of brain puncture, devised by Neisser and Pollak, in living subjects, and succeeded in demonstrating by dark-ground illumination active spirochaetes in both the cases examined. The results of their experiments on animals are now awaited.

A report of Bumm's experience with thorium and x rays in the treatment of malignant disease of the cervix uteri

and external genitalia was given in the letter from Berlin published on June 21st, and the discussion which followed his pronouncement was also noted. At the Gynaecological Congress at Halle, Professor Krönig of Freiburg, whose name is equally well known as a gynaecologist, recorded his results with the method in 176 cases of carcinoma; 26 of these, treated with unfiltered or very slightly filtered doses both locally and by the abdomen, without surgical intervention of any kind, after, in some cases, a temporary improvement, all died of the disease. It is worthy of note that 64 cases were operated on radically, and then treated prophylactically with *x*-ray and thorium applications; 43 of these cases were treated without a filter, and 23 died of carcinoma, whilst of 21 cases treated with very hard filtered *x* rays and thorium, not one has manifested a recurrence as yet, although 14 of them were treated more than a year ago. In 56 cases the patients who had refused operation were treated exclusively with strong filtered *x* rays and mesothorium in high dosage. The results in 8 of these cases were reported by Krönig at the International Gynaecological Congress in 1912. Of the remaining 48 only 18 are still under treatment, and 17 of these may be regarded as cured; 5 died during treatment, and 7 refused further applications. Krönig summarizes his conclusions by stating that the best chance for radio-therapeutic success is to use only large doses of mesothorium and hard *x* rays, which must be filtered to avoid the production of skin lesions. Professor Döderlein of Munich stated that in his opinion the therapeutic field in cases of malignant disease had been considerably enlarged by the introduction of this treatment. His own experiments led him to believe that mesothorium rays specifically affected carcinoma cells and caused them to degenerate, and that the clinical amelioration of the haemorrhages, suppuration, and induration went hand in hand with this microscopic change. The results of the mesothorium treatment of myomata and other uterine diseases were enthusiastically reported on by Gauss and Koniski of Freiburg at the same meeting. Without taking into account the age of the patients, the amount of haemorrhage or size of the tumour, they had treated 80 cases, of which 42 were myomata, exclusively by this method; 30 cases had recently been discharged as cured, and in them amenorrhoea with shrinkage, and in some cases complete disappearance of the tumour, had since set in. The average total time of irradiation in each case was 175 hours.

Professor von Hirsch of Munich reports results he has obtained in the *x*-ray treatment of 46 cases of myoma and 35 of fibrosis uteri (*Fortschritte auf dem Gebiete der Röntgenstrahlen*). The treatment adopted in Munich differs from that in other clinics mainly in that smaller doses of *x* rays are used. Hirsch does not use the method indiscriminately in all cases, and lays down certain contra-indications. He has never yet encountered a failure, and maintains that by means of *x* rays the organic function can be definitely abolished and amenorrhoea produced in any patient, irrespective of age. These opinions found support in the recently published discussions of the Gynaecological Congress at Halle, and it would seem that the radical treatment of fibroids will in the future be placed in the hands of the radiologist.

UNDER the will of the late Miss Jeannie Pollok, of Polloksheilds, the University of Glasgow receives a bequest of £10,000 for the foundation of a research lectureship in materia medica, while the Victoria Infirmary in the same city receives a like sum for the endowment of a ward.

OVER 2,000 members of the Juvenile Health Crusade, a branch of the Women's Imperial Health Association, whose object is to teach children the elements of health, and especially all that concerns the care of the teeth, took part in a very successful fête held at the Crystal Palace on June 28th. Prizes for the best kept teeth were presented by Lady Helmsley, President of the association, who spoke a few words of encouragement to the children, and a short address was delivered by Mr. George Thomson, one of the founders of the British Dental Hospital, who advised his audience to eat hard food and masticate it as much as possible. Later in the afternoon a charming concert was given by the children in the Great Hall of the Palace.

Correspondence.

THE PROPOSED REFORM OF THE CONSTITUTION.

SIR,—The Metropolitan Counties Branch Council having entrusted me with the responsible duty of bringing its scheme of reform before the Representative Meeting at Brighton, I was very pleased to read the letter of Dr. J. Roberts Thomson, in which he, in a most lucid and logical manner, practically outlines our scheme.

His evidence is all the more valuable inasmuch as he was Chairman of Council during the time the new constitution was being debated and finally issued; and also because at first he doubted its power for good, and acted on conservative lines. He fully recognizes, what has induced my council to formulate such a scheme, that when defects are found they should at once be remedied, in opposition to some who think that the present is not a proper time to deal with such matters, although failing to state any good reasons for such delay. One altogether fails to see what advantage is to accrue by leaving imperfect machinery to go on, becoming still more defective by flux of time.

We surely all desire that our Association should have as perfect a machinery as can be devised, and that its working should be efficient, economical, and rapid, so that whatever demands may be made on it, its members may feel that it will respond effectively.

With regard to the postal vote, I am quite convinced that its absence is a real grievance, as it is quite obvious that all men cannot attend the Divisional meetings, and so it is impossible to get the real opinion of the practitioners in such area.

It is quite possible that even if granted, men will fail to use it as they might, owing to that fatal apathy which seems so real a disease in the medical polity, but in that case the disfranchisement would be entirely of their own doing, the postal vote having brought the chance into their own homes.

I should like to thank Dr. Roberts Thomson for his testimony to the Metropolitan Counties Branch Council scheme, and sincerely hope that most Representatives will share his views.—I am, etc.,

London, S.W., June 28th. M. G. BIGGS.

SIR,—Dr. Thomson in his valuable contribution on this subject speaks from the point of view of the casual observer, and also with the authority of a past Chairman of Council. Perhaps it will not be out of place for one who has been in the thick of the fight to endeavour to criticize, with all due respect, some of his proposals, and then briefly to enunciate the lines on which, in my opinion, the reconstitution will probably develop.

I. The vested interest in Council seats has got to go. It is dying, but the death struggle is prolonged and painful. The Divisions are waking up, and in my experience the longer a man has been on the Council the more likely he is to run a risk of becoming suspect. This may be regrettable, but in many cases it has proved to be but an intelligent anticipation of events.

II. Here I venture to disagree with Dr. Thomson. I think that during the past two years the voice of the profession has been obtained by Division meetings, which were, as a rule, very well attended, and to a large extent the absentees belong to a class that cannot be got at by any means short of a personal canvass.

III. No one can traverse the statement that the voicing of the Association by delegates has not proved a success. One can reasonably go considerably further and say deliberately that it has proved a ghastly failure. A huge body of men, tied to vote one way, and one way only, on pain of instant dismissal, meet together at enormous expense and solemnly go through the farce of trying to convert each other, but each is obliged to turn a deaf ear to information of the most vital importance, and the deliberations can have only one result. This would be excruciatingly comic if the results were not so abominably tragic.

Let us, then, consider the proposed changes:

1. That the Representative Body will have to cease to be a body of delegates is certain, but it can only come

about by the gradual education of the members to the obvious difficulties of their Representatives in the present position, and, what is more important, by a gradual re-establishment of the confidence which has been so cruelly maltreated. I am most emphatic that the time is not ripe for the Council to suggest the change as a recommendation to Divisions.

2. It will never do for the Representative Body to elect the Council from its own members. The Representative Body has that power now to the extent of electing four members, and used its power last July with most disastrous results. I make bold to say that it is nothing short of an anachronism that the Representative Body should replace on the Council men who have deliberately and of set purpose been defeated at the polls by their Divisions. I urge the following reasons against Dr. Thomson's suggested method of election:

(*a*) The scope for wire-pulling is too great where the electorate is gathered together in one place.

(*b*) The vested interest would consequently gain a new lease of life.

(*c*) Any Representative capable of making a soul-stirring oration, apart from his capability as a worker, would stand a good chance of election.

3. That the Council should be the executive of the Representative Body is desirable if only to prevent that body from pleading impotence when it ought to do something that it does not want to do, and only becoming aware of its power when it wants to do something which it ought not to do.

5 and 6. These deal with the postal vote. Before having had two years' experience of honorary secretary's work I was a believer in the postal vote. To-day I stand confessed a hardened convert. As an instance, let us take the recent election in the South-Eastern Branch. There were four candidates, two of whom did an enormous amount of work, while the other two certainly did not sit still. What was the result of the postal vote? Just over one in three voted. I fear that a postal vote on any question, unless backed by a personal canvass, would never yield a 50 per cent. result. Therefore let us stick to the Division meetings, which do good by bringing men together.

My own ideas as to the reconstitution are drastic, and may possibly be described in some particulars as reactionary. Briefly:

(*a*) Abolish the Representative Body; it is costly, futile, and unwieldy.

(*b*) Give the Council supreme power and let it meet once a month. This should be feasible if the Council consisted almost entirely of general practitioners elected on a territorial basis.

(*c*) Make all members of Council *ex officio* members of all the Divisions in their constituency, and get them to attend as many meetings as possible.

(*d*) Appoint paid travelling secretaries, whose duty it would be to travel about lecturing, attending meetings, and as far as possible calling on individuals. I am of opinion that this work properly carried out would obviate the necessity of a Representative Body, and would be much more efficacious and infinitely cheaper.

That, Sir, is my rough idea, and in order to escape the charge of having cribbed any points from the very excellent report of the State Sickness Insurance Committee, I may tell you that I laid my scheme before the members of the Dartford Division three weeks ago.

Let me conclude my remarks with an appeal to the members to unite in one great effort to preserve the integrity of our only organization. If we are to have protection we must pay for it. Our present subscription would not buy the Journal at a bookstall, and yet how much more do we expect of it. Something must be done, and that at once, to restore confidence. We must have a policy and a definite one. Panel work is either derogatory or it is not. The Association has twice emphatically affirmed that it is; our mouthpiece, the Journal, says it is not. This sort of thing cripples enthusiasts; how much more does it kill the ordinary member. It cannot go on. A definite pronouncement will have to be made at Brighton. Those of us who have the welfare of the Association at heart must hope the minority will stick loyally to the majority, but if compromise is the outcome of the July meeting, there will be a landslide the magnitude of which may lead to a disaster.—I am, etc.,

Gillingham, Kent, July 1st. C. Courtenay Lord.

EVIDENCE FOR AND AGAINST TUBERCULIN.

Sir,—I have been hoping every week that some well-known authority on tuberculin would bring some heavy artillery to bear upon the article of Dr. Batty Shaw of May 5th, of which the outcome was that tuberculin is therapeutically useless.

I am constrained now to submit some obvious criticisms of his results because I believe them to be seriously misleading, and because they form a pretext for depriving tuberculous patients of tuberculin in that large class of doctors who are prejudiced against the use of tuberculin.

I am aware that my deficient critical faculty will make me miss many points, but my clinical impressions on the value of tuberculin should be worth recording for several reasons—partly because I started as an unbeliever and remained sceptical for the first four years, during which I was using Wright's doses partly controlled by the opsonic index in my own laboratory. But during the next four years of using tuberculin by the Continental method of almost reactionless increase of dosage every five days or so, I became convinced that tuberculin did the patient a great deal of good in perhaps the majority of cases in which I tried it. I quite admit that in many cases I could not be sure that any result was produced, and that in a very few the remedy was not tolerated and was soon abandoned. These clinical impressions were formed from my in-patients and out-patients at a general infirmary and a children's hospital, and from my private practice. The effect of improved surroundings in in-patients was always allowed to wear off before giving a new remedy like tuberculin. Otherwise, of course, all conclusions are fallacious.

Physical signs are too variable from day to day to constitute a reliable guide to the action of a remedy, except, perhaps, in that stage at which they become absent and remain so. But marked gain in energy and well-being following each injection are often obviously in relation of cause and effect, and cases which exhibit this feature generally do very well. If you have a remedy which often produces this marked and admirable result, generally associated with gain in weight and strength, it seems to me obvious that that remedy is doing the patient good clinically, and helping him to fight his disease in a way which no other remedy does in tuberculosis. Often to such patients I have said "You know there are many doctors who say that tuberculin does no good to your disease." A scornful laugh, and "I know better," is the type of their reply.

Statistics I cannot submit, but I do not think they are of much value in so protean a disease as phthisis, or with a remedy like tuberculin which produces effects few of which can be measured or even adequately rendered into words.

It is the custom for men of science rather to sneer at clinical impressions. I remember doing it myself when I was a physiologist. But I submit that clinical impressions when scrupulously arrived at are of solid and scientific value. We can often arrive at a sound conclusion as to the value of a remedy long before we can at all understand its value. And yet Dr. Batty Shaw's chief evidence against tuberculin consists of theoretical reasonings based on the theory of immunity and on the absence of evidence in animal experiments. Now in both these departments of science our knowledge is extremely incomplete and daily growing. If clinicians find as a matter of fact that tuberculin does tuberculous patients a great deal of good, it becomes the duty of the theorists and experimentalists to modify the theory and find the reason of the discrepancy in the animal experiments. To give an agricultural illustration, farmers knew very well that a crop of clover did good to the land long before the

bacteriologists discovered the explanation—namely, that the bacteria which were provided with board and lodging in the tubercles of the clover roots were able to convert the unassimilable nitrogen of the air into assimilable compounds. My point is that careful unbiassed observations summated by the human mind are apt to turn out more reliable in this baffling kind of inquiry than theories and experiments which are still in a state of flux and being daily extended and amended.

Dr. Shaw's third indictment against tuberculin is based on the admirable method of comparing the progress of patients treated with and without tuberculin. That method was applied to diphtheria antitoxin in the days when it was still on its trial, several hundred cases being tried with and without it in Germany. The results of the test abundantly verified the clinical impressions which had been formed of its great value. But suppose only nineteen cases of diphtheria had thus been tested, half with antitoxin and half without it. With such small numbers, in so variable a disease as diphtheria, the arithmetical verdict might very well have been entirely misleading. And yet on that small number of nineteen patients is based the weighty indictment of Drs. Shaw and Rigg. No, Dr. Shaw must earn the gratitude of all of us by continuing his excellent experiments on a much larger scale, which will, I believe, reverse his present verdict.

But I hope he will give tuberculin a fair chance next time. His present method of compressing a strong course of tuberculin into three months, with doses every two days, according to an almost cast-iron scheme, seems to me certain to do more harm than good. No wonder his tuberculin patients had to spend much of their time in bed. Generally a patient is poorly and headachy the day after an injection, and it is during the next two or three days that he reaps the benefit. But in this test the patient had no sooner started to benefit from one injection when he was upset by another. To get the best out of tuberculin it must be given by a very experienced man; whereas it was given by Dr. Rigg when he was a house-physician, and hence gaining his experience, and without the guidance of Dr. Shaw. The dosage and their spacing should be adapted to the idiosyncrasy of each patient, and given without a time limit. It needs no statistics to prove that tuberculin given faultily will do more harm than good.

But, apart from its clinical merits, we must not forget the psychic benefit to the patient of meeting his doctor every few days, of having his physiological errors pointed out, and feeling that something potent is being done for him. This psychic effect alone must be of some clinical value.

Another great advantage of tuberculin treatment is that it can be carried out at home. Fine climates and sanatoriums are grand things if you never leave them, but to have to return with tinkered lungs to those home surroundings which originally caused the *sound* lungs to become diseased too often spells relapse. Whereas a cure with the aid of tuberculin in spite of home surroundings should have a much greater chance of permanence.

The authors of these two papers must not think, because I have found much to criticize from the clinical standpoint, that I have not also found in their papers much to admire and to earn my sympathy in the perhaps insuperable difficulties of the task they set themselves.—I am, etc.,

Hull, June 22nd. FRANK C. EVE.

P.S.—Since writing my letter on the very favourable clinical impressions which I had formed on tuberculin, and my criticisms on the papers of Drs. Shaw and Rigg, another contribution has appeared by Dr. Watkin in the BRITISH MEDICAL JOURNAL of June 28th. He describes 22 cases treated half with and half without tuberculin, with similar results to Dr. Rigg's cases. But, as they were nearly all febrile cases—only 2 afebrile patients had tuberculin—my criticisms apply to these results with even greater force. For, if three months' treatment is far too short a time for (1) a course of tuberculin, (2) to judge of its final effect on physical signs, and (3) on the patient's health, then *a fortiori* it is much too short a period for febrile cases, which are very much more tedious to treat. Dr. Watkin very fairly admits, too, that two cases showed increase of fibrosis although the râles were stationary or improving. This shows that râles are *not* reliable as an index of progress of the case. But as all three papers I am criticizing are admittedly based upon râles as the one reliable criterion of progress, it is evident that their conclusions have a most sandy foundation. The "controlled" use of tuberculin seems to me to be a far more difficult piece of work than these authors would have us to believe. I doubt if it be possible to form reliable conclusions on this subject except by careful, honest, and extensive clinical impressions, and these are not easy to form.

SIR,—Allow me to draw attention to an error in my article on The Controlled Use of New Tuberculin, published in the BRITISH MEDICAL JOURNAL of June 28th. In putting the 22 results in a different form, the number of cases which remained *in statu quo* was given as 11 instead of 10; and the number of those which were worse as 5 instead of 6.

The paragraph should have read as follows:

A. Of 6 cases which improved, 3 had been treated with tuberculin, 3 had not.
B. Of 10 cases which remained *in statu quo*, 5 had been treated with tuberculin, 5 had not.
C. Of 6 cases which were worse, 3 had been treated with tuberculin, 3 had not.

—I am, etc.,

ARTHUR C. WATKIN, M.R.C.S., L.R.C.P., D.P.H.

Shrewsbury, July 1st.

THE TREATMENT OF NEURASTHENIA.

SIR,—I never thought I should live to see an article so much to my mind as that in the BRITISH MEDICAL JOURNAL of June 28th, on The Comforts and Discomforts of Old Age. It will help those who read it to avoid some pitfalls which swallow prematurely so many of our profession. When you were good enough to print a letter from me in which I said I could cure neurasthenia in three days, I was inundated with letters from all parts of the world, from New York to Hong Kong, written by members who themselves were victims of that sad condition, wishing to know how that could be done. I was sorry I could not undertake to answer them individually; but one of my correspondents from Australia thought it would be by making them fast; and I have little doubt that fasting will cure most diseases, but there is danger in making some cases fast, and fortunately it is not necessary to withhold all food, to which few patients are inclined to submit. Having read your excellent article I feel inclined to say with a pious old man, "Now, Lord, let Thy servant depart in peace," for I feel sure that a stone is set rolling whose impetus will soon smash many orthodox theories and revolutionize the whole practice of medicine. Old as I am, I have managed to attend pretty regularly our annual meetings and do what I could by word of mouth to warn my brethren of the danger that lurks unsuspected in food, but each year I have been saddened by missing so many of my acquaintances, struck down by what is called sudden, and certainly premature, death. I fear that I will not be able to leave my work so as to attend the annual meeting this year, but I hope that some discussion will be directed to the subject of food reform, the importance of which your article emphasizes. I was so impressed with the importance of food as a cause of disease that I wrote what, but for some trouble with the printer, would have appeared some years ago in book form. If it should never appear I now feel sure that others will enter the lists and advocate the cause as strenuously as I could do, so that if I should fall by the way, suddenly perhaps, owing to some indiscretion—for even Homer at times nodded—my efforts will not be missed; and if this should be my last opportunity of addressing my fellow members, I should like to say, for the sake of those suffering from neurasthenia who wrote to me, with whom I have good reason to sympathize, that if they have sufficient will power left to eat only once in the twenty-four hours, and little enough then, they will soon get quit of the gloom which makes life a burden and this world a hell. If they have not

sufficient will power left, restraint alone will save them from premature, though it may be welcome, death.—I am, etc.,

Hawick, June 28th. JOHN HADDON, M.D.

LIQUID PARAFFIN.

SIR,—Since the recent publication of some articles in the BRITISH MEDICAL JOURNAL and elsewhere on the investigations made here on the subject of tar and pitch cancer, we have received several inquiries as to whether there is any danger in the use of "liquid paraffin" as a purgative. We beg, therefore, that you will allow us to explain that, as far as we know, this paraffin is harmless for that purpose.

The question arose because we mentioned that auxetics and kinetics, substances which can be detected in coal tar, and pitch, and which seem to be the predisposing cause of pitch cancer, have also been detected in refined petroleum. Now, liquid paraffin is not the same thing as refined petroleum, although the latter is sometimes called "refined paraffin" or "paraffin oil." It is true that they are both fractions in the distillation of petroleum, but refined petroleum or paraffin oil (which contains auxetic) distils over at temperatures from 150° C. to 300° C., whereas the so-called liquid paraffin does not come over until a temperature of not lower than 360° C. is reached. The auxetics in tar seem to be volatile at temperatures from 300° C. to 320° C. The refined petroleum contains substances (including auxetic) which are soluble in water, but it is never taken internally; the liquid paraffin, on the other hand, if pure, is insoluble in water, dilute acids, or alkalis, and it is probable, therefore, that its action as a purgative is only mechanical. Nevertheless, we have tested liquid paraffin with living cells in the same way as the other tests with coal tar, and pitch were made, and the result was entirely negative as regards causing cell proliferation.—We are, etc.,

H. C. ROSS.
The John Howard McFadden Research Fund, S.W., June 24th. J. W. CROPPER.

VERONAL POISONING.

SIR,—We read with much interest an editorial article entitled "Veronal Poisoning," which appeared in the BRITISH MEDICAL JOURNAL of March 15th, p. 566. There are two passages, however, in this article on which we would like shortly to comment, in the hope that perhaps our remarks may be of service to you for future reference.

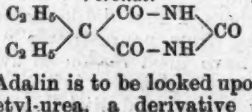
1. Veronal . . . was placed on the market as a harmless hypnotic by the German chemists who introduced it, and it is only as a result of numerous fatalities following its use that the dangerous properties of the drug have become recognized.

As no doubt you know, the firm we represent, in conjunction with Mr. Merck, Darmstadt, were responsible for the introduction of veronal, and we have very carefully examined all the statements that have been made officially with reference to the hypnotic. Nowhere, however, can we find support for the words "harmless hypnotic" beyond the statement that the preparation is said to be relatively harmless in therapeutic doses, which statement we believe you will agree with us is fully upheld by the highest authorities in this country, and elsewhere. We have from the first understood that the hypnotic is an exceedingly potent one, and have always laid stress on the danger of exceeding the therapeutic doses.

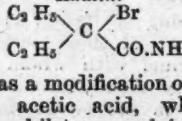
2. Adalin and bromural are related to veronal in composition.

While this is not a misstatement, it is open to misconception, since between veronal and adalin there are very material differences. This will readily be seen by a cursory examination of the graphic formulae of the two preparations.

Veronal.



Adalin.



Adalin is to be looked upon as a modification of di-ethyl-acetyl-urea, a derivative of acetic acid, which only contains one carboxyl group, whilst veronal is di-ethyl-malonyl-urea, a derivative of malonic acid, which contains two carboxyl groups. Adalin is therefore derived from a monobasic acid; veronal, on the other hand, from a dibasic acid.

Professor Emil Fischer, the discoverer of veronal, said that it was the cyclic structure of the urea-derivative of di-ethyl-malonic acid that made it so much more powerfully hypnotic than di-ethyl-acetic acid. These facts are fully supported by clinical experience.

Veronal is undoubtedly a powerful hypnotic. Adalin, on the other hand, can only be described at the most as a hypnotic of medium strength. It is better described as a sedative of especial value in simple nervous insomnia. It produces sleep indirectly by the removal of excited conditions preventing it. As a matter of fact, the chief claim for the preparation is that it stands midway between the pure sedatives, such as bromides and valerian, and the powerful hypnotics veronal, sulphonal, trional, etc., on the other.

Further, you will no doubt agree that it is incorrect to assume that two or more drugs of similar chemical composition (formula) of necessity have the same toxicity. Professor Dixon may be quoted on the point:

When the composition of a drug is altered, be it ever so little, its physical characters also change, its volatility, solubility, osmotic properties, ionization, all or any of which may *considerably modify* its pharmacological action.

It is therefore impossible to draw up general laws forecasting the action of a molecule when it has been subjected to some small change in composition without knowing the physics of such a change.

In conclusion, we would just like to say that we, as much as any one else, deplore the untoward results that have attended the indiscriminate use of veronal, but that we know that generally the result has been due to gross overdosage. Further, we cordially welcomed the restrictions imposed on the sale of the preparation afforded by its being placed on the poisons schedule.—We are, etc.,

London, E.C., June 17th. THE BAYER CO., LTD.

ASPIRIN AND ACETO-SALICYLIC ACID: A CORRECTION.

SIR,—With reference to our communication on "A Case of Aspirin Poisoning," in the JOURNAL of May 24th, we desire to make a correction. Notwithstanding the fact that the word "aspirin" was written on the case-sheet, the preparation sent to the ward from the dispensary was not aspirin but aceto-salicylic acid of another make. This circumstance having now come to our notice, we consider it only fair to the Bayer Company to make known this fact, and to express our regret that the term "aspirin" was employed instead of aceto-salicylic acid. We are, of course, aware that the term "aspirin" can only be applied to the product of the Bayer Company, who originally introduced the drug, and who, we understand, make a special feature in maintaining the standard arrived at by the early pharmacological and clinical experiments.—We are, etc.,

JAMES LINDSAY, M.D., M.R.C.P.,
Honorary Physician.
A. J. BRUCE LECKIE, M.D.,
Resident Medical Officer.
Royal Mineral Water Hospital, Bath, June 26th.

A CONSTITUTIONAL POINT.

SIR,—If the questions at issue were only personal I should leave the Home Secretary's accusations to recoil upon their author, but as it is vital to the professional safety of the Fellows and Members of the Royal College of Surgeons of England that unanswered slanders should not be bandied about secretly among their colleagues and concealed from the accused persons, I cannot allow Sir Rickman Godlee's letter to pass without comment.

I say *secretly*, because for six weeks I was kept in ignorance of Mr. McKenna's communication to the College.

The principal facts are clear—namely, that the Home Secretary accused Mr. Mansell Moullin and myself of having made complaints against the professional conduct and skill of two medical practitioners. We made no such complaints, and the inaccuracy of the Home Secretary's accusations have elsewhere been demonstrated.[1]

[1] *Manchester Guardian, Globe*, etc., June 23rd.

The President of the College says I have "a fixed idea" that he is conspiring against me. I consider this description of my attitude is calculated to damage me in the eyes of my professional colleagues.

The Home Secretary sent the accusations to the President on May 5th. On either May 5th, 6th, or 7th Sir Rickman Godlee held a consultation at the Home Office with Sir Edward Troup, in the course of which (I am informed by Mr. Mansell Moullin) he told the Home Office that that department could bring a libel action against us.

The documents were subsequently placed before the Council at its regular meeting on May 8th.

With regard to Sir Rickman Godlee's statement that he replied to my letter, asking to be informed of the charges against me, before he received my solicitor's first letter, I made my statement relying on the dates of posting. I accept Sir Rickman Godlee's statement that the letter which did not reach me till the following morning was written on the previous day before the receipt of my solicitor's first letter.—I am, etc.,

London, W., June 23rd. VICTOR HORSLEY.

TREATMENT OF TAENIA BY THYMOL.

SIR,—In the Epitome of Current Medical Literature, June 7th, Art. 348, I have read about the treatment of taenia by thymol.

As far back as 1898 I ordered a large supply of tabloids (5 grains each), which were specially made for me by Messrs. Burroughs, Wellcome and Co., for the treatment of this intestinal parasite. I know I was the first to employ thymol for this purpose, and it has proved itself a most successful form of treatment in my hands. I administer one or two tabloids in the early morning with a tumblerful of water, and generally in the evening of the same day the tapeworm is passed in a stool which has a strong odour of thyme.

The *Journal de médecine et de chirurgie pratiques* for May 25th, 1913, Art. 24051, deals with this subject, and it states that I was led to try thymol in cases of taenia because of its satisfactory results in ankylostomiasis.—I am, etc.,

Puerto Orotava, Teneriffe, June 16th. GEORGE V. PEREZ.

Public Health AND POOR LAW MEDICAL SERVICES.

ILLNESS CAUSED BY SEWER GAS.

IN a case heard at the recent Hertfordshire assizes a householder recovered from the Urban District Council £125 4s. 6d. damages for illness and expense caused by sewer gas escaping from a ventilating shaft which the council had erected in the road near the house in 1911. According to the report in the *Times*, the plaintiff and his family suffered from diphtheria, headache, and diarrhoea from September, 1911, to July, 1912, when the shaft was removed. The questions left to the jury were: (1) Were the plaintiffs injured by the smell from the shaft? (2) If so, was the shaft improperly erected, or the sewer kept so as to be a nuisance or injury to health? And (3) Did the defendants act with reasonable care?

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Reigate Borough.—The population of the borough of Reigate at the middle of 1912 was estimated at 28,834. The net birth-rate was 17.1 per 1,000 and the net death-rate 10.7 per 1,000. The infant mortality-rate was equal to 61 per 1,000 births. A very complete disinfecting station came into operation during the year. In addition to a high-pressure steam disinfecting machine there is also installed a steeping tank for stained textile articles, which would be spoilt by the steam apparatus, and a fumigating cupboard for other articles which cannot be disinfected by steaming or soaking. In this cupboard formalin vapour has been used, and experiment has shown that non-sporing bacteria, such as *B. coli*, have been killed, but that the spores of *B. subtilis* have not been destroyed even when the wool containing them was exposed direct to the vapour. Dr. A. E. Porter, the medical officer of health, points out, however, that as diphtheria and typhoid fever, and probably scarlet fever, are due to non-sporing micro-organisms, the fumigating process is presumably sufficient for surface disinfection after these diseases. Dr. Porter refers to the tendency of public health legislation to impose large administrative duties upon county councils while leaving much of the spade work to be carried out by the sanitary authorities. He thinks it is open to argument whether this is a desirable arrangement in a large county like Surrey, where the standard of public health is relatively high. The result at Reigate is, he says, that much useless clerical work is entailed, whilst the reciprocal benefit received is negligible. He points out that this tendency is to be found in some of the provisions of the Milk and Dairies Bill, the consideration of which should be watched by the local authorities concerned. A hybrid arrangement, he says, whereby administrative and executive duties are shared by the larger and smaller authorities, cannot fail to be accompanied by overlapping, by regrettable delays, and by unnecessary clerical and other work.

Medico-Legal.

CLAIM FOR DAMAGES AGAINST A NURSING HOME.

ONE of the judges of the King's Bench Division of the High Court and a special jury were occupied during the greater part of June 12th and June 13th in hearing an action for damages brought against the authorities of St. Peter's Nursing Home at St. Albans. The plaintiff, a road contractor's foreman, was the husband of a woman who died from puerperal fever and who had been attended by a midwife supplied by the institution in question, and the persons cited by name as defendants included several medical men who act as honorary medical advisers to the managing committee of the home, which is conducted on a purely philanthropic basis. The claim for damages was based upon the ground that the defendants were under a contractual obligation to attend the plaintiff's wife during her confinement, and that, while doing so, they had, through negligence, infected her with puerperal fever and thus caused her death.

The facts proved, as reported in the *Herts Advertiser* and the *Times*, were that the midwife sent by the home to attend the plaintiff's wife was in attendance also on a woman who a day later died from puerperal fever, and that when the condition of this first patient became known their midwife was withdrawn from attendance on the plaintiff's wife and another sent in her place, the first midwife thus visiting the plaintiff's wife only during the first twenty-four hours. This attendance, it was alleged, however, constituted negligence, because in the circumstances there should have been no attendance by this midwife at all. The defence put forward was to the effect that this attendance was inevitable; though the attack from which the first patient suffered terminated fatally very rapidly, it had not run a normal course, and the condition was not, and could not be, recognized in time for the midwife's attendance on any other patient to be prevented.

The jury agreed that the contract was to provide a nurse, but they were unable to agree whether there was any negligence on the part of the nurse or of the matron. As they added that there was no likelihood of their agreeing on the question of negligence they were discharged.

Judgement was not entered for either side, and the net result would seem to be that while the plaintiff is at liberty, should he be so disposed, to bring a further action, the defendants, including the medical men among them, have been involved in heavy expenditure.

INFANT LIFE PROTECTION.

AT the recent Dundrum Petty Sessions a woman was summoned by an inspector under the Infant Life Protection Act for having failed to notify the local authority that she had accepted for nursing and maintenance three children under the age of 7 years. One of the three children had died since the inspector's visit, while the woman had tried to prevent the inspector seeing the premises. She had been fined last May for a similar offence, and on that occasion she promised not to take any more children, as her house was reported to be unsuitable. The defendant was sentenced to six months' hard labour.

INQUEST FEES.

J. A. asks to whom he should apply for his fee as medical witness in an inquest case, where, having given the evidence required, the coroner neglects to forward the fee even on a second application.

*** In the circumstances stated application should be made to the County Treasurer, who, although only able to pay out money in connexion with inquests under the coroner's certificate, would doubtless communicate with the coroner in order to clear up the point.

THE Italian Government has under consideration the question of founding an institute for the study of tropical diseases. The Superior Council of Public Instruction, to which the matter was in the first instance referred, recommended the foundation of a tropical institute in connexion with the University of Naples. The question has now been submitted to the Colonial Minister, who will decide whether the institute shall be at Naples or Tripoli.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

The following candidates have been approved at the examinations indicated:

Third M.B. (*Part II, Medicine, Surgery, and Midwifery*). (*New Regulations*).—W. A. Anderson, M. Avent, C. G. H. Campbell, J. D. Clarke, H. F. Comyn, H. A. Douglas, J. R. Griffith, J. R. Heath, A. N. Hodges, R. Hodson, G. L. Keynes, L. R. King, J. H. Newmarch, A. B. Paul, M. N. Perrin, W. A. Pocock, E. Ll. N. Rhodes, A. C. Roxburgh, E. L. K. Sargent, L. W. K. Scargill, R. Sherman, G. A. Smythe, V. F. Soothill, W. A. Stokes, J. Ll. M. Symms, F. J. Thorne, J. M. Wallace, M. H. Watney, A. J. Waugh.

Third M.B. (*Part II, Medicine, Pathology, and Pharmacology*). (*New Regulations*).—K. B. Aikman, E. J. Y. Brash, G. M. Chapman, H. Y. Mansfield, D. N. Seth-Smith, W. J. F. Symons, E. S. Taylor.

UNIVERSITY OF DURHAM.

Degrees.

The following were among the degrees conferred at a meeting of the Senate on June 24th:

M.D.—W. Barkes, G. E. Lloyd, G. C. M'Gonigle, Matilda A. Sinclair.

M.D. (*for Practitioners of Fifteen Years' Standing*).—J. W. Alexander, M. B. Foster, J. M. Handy, E. T. MacIntyre, R. Price, R. C. Tweedy.

M.B.—E. Babst, R. E. Bell, G. Carse, H. Fairclough, A. C. Jap, R. L. Kitching, G. E. W. Lacey, C. W. Morris, Nora Murphy, C. A. B. O'Neill, E. Phillips, J. L. Pringle, C. O. Shackleton, J. S. Soutter, G. S. Woodman.

B.S.—E. Babst, G. Carse, H. Fairclough, A. C. Jap, R. L. Kitching, G. E. W. Lacey, C. W. Morris, Nora Murphy, C. A. B. O'Neill, E. Phillips, J. L. Pringle, C. O. Shackleton, J. S. Soutter, G. S. Woodman.

B.Hy.—E. E. Norman.

Examinations.

The following candidates have been approved at the examinations indicated:

First M.B. (*All Subjects*).—W. Duncan, *M. J. Erdberg, H. H. Bailey, G. M. Kerry, S. A. Shahid. (*Chemistry and Physics only*).—P. V. Anderson, N. Briggs, J. A. Berry, J. S. Clark, E. C. Dunlop, S. E. Goulstine, C. G. Irwin, H. M. Leete. (*Elementary Anatomy and Biology only*).—J. N. Alexander, M. C. Joynt, P. Murphy, F. Newman, H. Sterne-Howitt.

Second M.B. (*Anatomy and Physiology*).—*G. A. Clark, *J. Gilmour, H. C. Broadhurst, J. Brumwell, N. Braithwaite, Mary R. Campbell, R. Hunter, J. Horsley, J. D. Johnson, H. A. Lake, J. K. R. Landells, N. A. Martin, G. N. Metzger, T. W. Shaw, W. O. F. Sinclair, F. R. Sturridge.

Third M.B.—H. H. Elliot, I. D. Evans, Mary S. Gordon, Ethne Haigh, E. E. D. Lau, L. Magee, J. E. Measham, J. D. Proud, F. B. Robson, P. Savage, A. Smith, W. Stott.

* Second Class Honours.

UNIVERSITY OF DUBLIN.

At a meeting of the Senate on June 26th the following were among the degrees conferred:

M.Ch. (*Honoris Causâ*).—Sir R. H. Woods.

M.D.—G. E. Adam, R. J. Attridge, E. J. H. Garstin, J. F. Nicholson, J. N. G. Nolan, J. A. G. Ponton, J. H. C. Thompson, R. T. Vaughan.

M.A.O.—S. G. S. Haughton.

M.B., Ch.B., B.A.O.—E. N. Bateman, H. Boyers, H. B. F. Dixon, Mabel A. Dobbin, H. L. D'O. Duckworth, R. A. G. Elliott, G. F. Evans, C. D. Goodenough, D. H. Hadden, R. S. G. Halpin, B. Johnson, T. J. Kelly, D. L. M'Cullough, R. J. R. Mecredy, G. J. Merrick, C. J. O'Reilly, J. T. Simpson, J. A. Small.

The Services.

CENTENARIAN INDIAN MEDICAL OFFICERS.

The note in the Journal of March 15th, page 570, on Surgeon-Major Henry Benjamin Hinton, who attained the age of 100 on March 7th, 1913, calls to mind the fact that he is not the first officer of the Indian Medical Service who has attained that patriarchal age within the last few years. India is not generally regarded as a sanitorium, even now, but no less than three officers of the Indian Medical Service, on the Bengal retired list, have reached 100 years of age within the last fifteen years, the other two being John Bowron and Thomas Lambert Hinton.

John Bowron was born in February, 1799, and entered the Subordinate Medical Department in Bengal as a medical pupil, on July 1st, 1813, at the age of 14. On September 7th, 1816, he became apothecary, and on December 20th, 1825, received a commission as assistant surgeon. He became surgeon on December 16th, 1840, retired on December 31st, 1851, with over thirty-eight years' service, and drew his pension for another forty-seven years, dying at Hove, Sussex, on March 5th, 1899, a few weeks after completing his century. He served in the Punjab war of 1848–49.

Thomas Lambert Hinton was born on May 1st, 1808, educated at Oxford and Paris, took the M.R.C.S. and L.S.A. in 1833, and entered the Bengal Medical Service as assistant surgeon on January 30th, 1842. He only spent a few years in India, resigning his commission on October 24th, 1845, after which he settled in practice at home. He was for many years Surgeon to Reading Dispensary. He died at St. Leonards on June 14th, 1906, having passed the century by some six weeks.

The two Hintons, we understand, were not related to each other, which increases the singularity of the coincidence that both should enter the Indian Medical Service, and both should live to the age of 100. T. L. Hinton, though five years senior in age to H. B. Hinton, was three years his junior in the service.

The careers of these three centenarians differ a good deal. Bowron certainly spent forty years in India, probably over fifty. For, entering the subordinate service at 14, he was probably born in India. During his twelve years' service in the inferior grade he must have had a pretty rough time. Whether he saw any active service at this stage does not seem to be recorded. H. B. Hinton also spent nearly thirty years in India, seeing active service in four campaigns, including two of the hardest ever fought in India—the two Sikh wars. T. L. Hinton spent less than four years in the East. The greater part of his life was spent in the quieter and less eventful career of a country practitioner in England, a career probably as much exposed to risks to life and health as those of his namesake and of Bowron.

ORDER OF THE MEDJIDIEH.

The King has granted permission to Captain R. G. Anderson, R.A.M.C., to accept and wear the Imperial Ottoman Order of the Medjidieh of the Fourth Class, conferred upon him by the Khedive of Egypt in recognition of valuable services rendered.

TERRITORIAL FORCE.

The King has conferred the Territorial Decoration upon the undermentioned officers of the Territorial Force: Surgeon-Major Percy B. Mackay, Yorkshire Dragoons (Queen's Own) Yeomanry; Major Martin A. Cooke, London Mounted Brigade Field Ambulance; Major Christopher Vise, M.D., attached to the Fourth Battalion, Queen's Own (Royal West Kent Regiment); Major Stephen Nesfield, attached to the Eighth (Ardwick) Battalion, Manchester Regiment; Major John B. Stevens, M.B., attached to the Sixth (Renfrewshire) Battalion (Princess Louise's) Argyll and Sutherland Highlanders.

The late Dr. John Frederick Joseph Sykes, M.O.H. St. Pancras, left estate valued at £5,699.

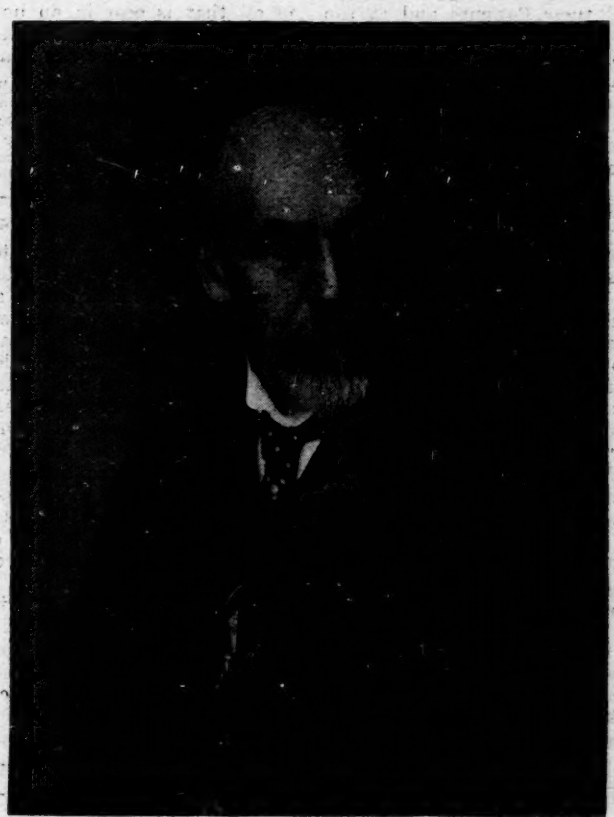
The twenty-fifth annual report of the Invalid Children's Aid Association states that during the year 1912 over 2,000 new cases were referred to the central office and nearly 1,500 children were sent away, while over 2,000 more were sent through the various branches of the association. Few of these children remained away for less than three months, and many were sent for a year or even longer. The sum expended on the board and travelling expenses of the children in 1912 was £5,291; the amount received at the central office during the whole year was £9,883; this, with the £7,582 collected by the branches, made a total income of £17,000. The income of the association in 1912 exceeded that of the previous year by some £1,600 at the central office and by £1,886 at the branches. The expenditure at the central office amounted to £9,426; of this, £6,360 was spent directly on the children and £1,100 on rent, salaries, and other incidental expenses. For the first time in its history the association had a balance all through the year, this being due to the decision of the Executive Committee in 1911 to accept the profits from the Sunday cinematograph show under the agreement with the London County Council. The amount received during 1912 from this source was £1,290, part of which was treated as capital and placed on deposit. Owing to objections from various quarters, however, this arrangement had been discontinued. The number of branches of the association in the suburbs and outlying districts of London, many of which were self-supporting, had increased; and in the course of the present year it was expected that at least two more would be added to the fifteen already in existence. The demands on the association from those outside London also continued to increase, and there were at present 713 country children on the register, of whom 463 were entered in 1912. These cases received every assistance from the association, which stipulated, however, that the London funds did not bear any of the cost, and that all expenses incurred should be raised locally.

Obituary.

RODERICK MACLAREN, M.D.,

CONSULTING SURGEON TO THE CUMBERLAND INFIRMARY, CARLISLE.

By the death of Dr. Roderick Maclaren the North of England loses one of its most distinguished surgeons and Carlisle one of its most eminent citizens. Although his health had been failing for the last eighteen months, he appeared to have derived much benefit from a three months' holiday in Italy in the spring of this year, and he resumed his professional work on his return about the middle of April. He continued at work until June 11th, when he saw some patients—for the last time, as it proved. On the following day he went with Mrs. Maclaren to Keswick to visit his old friend and fellow-student, Dr. Knight. After a drive round Derwentwater and a visit to Crosthwaite Church, he had a seizure on the road, followed by hemiplegia and aphasia. He was removed to Dr. Knight's residence, and died there on June 17th.



DR. RODERICK MACLAREN.
(Photograph by S. W. B. and D. H. Jack, Carlisle.)

Dr. Maclaren was the elder son of Mr. Roderick Maclaren, an officer in H.M. Customs, and was born at Dumfries in 1844. He was educated with his brother, the late Dr. James Maclaren, Medical Superintendent of the Larbert Asylum, and some others, under a private tutor at Crieff. Among his companions was the late Professor D. J. Cunningham, of Edinburgh, and in an appreciation appended to the obituary notice published in this JOURNAL under date July 3rd, 1909, Dr. Maclaren gave a graphic account of his school life. From Crieff he proceeded to the University of Edinburgh, matriculating in 1860 and graduating M.D. in 1865, having previously obtained the Licentiateship of the Royal College of Surgeons. Soon after his graduation he was appointed resident house-surgeon of the Carlisle Dispensary, and devoted himself with such zeal and energy to the duties that his health, which was never robust, broke down. Symptoms of lung trouble supervened, and, being advised to take a sea voyage, he left England in November, 1866, in a sailing ship for Australia. During the voyage he made careful observations of the climatic conditions, the effect of alcohol on patients suffering from phthisis, and the class of cases which is most likely to receive benefit from a long sea voyage. These observations were embodied in a paper entitled "On a Long Sea Voyage in Phthisis Pulmonalis," which was published in the *British and Foreign Medico-Chirurgical Review*, January, 1871. While at sea he had a somewhat exciting experience, which probably first turned the bent of his mind to surgery. A mutiny broke out, and he found an opportunity of exercising his skill in the extraction of bullets from the bodies of several members of the crew.

The immediate object of the voyage was entirely successful. He returned to England completely restored to health, and commenced practice in Carlisle in 1867. He was appointed surgeon to the Carlisle Dispensary in 1869, and medical officer to the Fever Hospital in the same year. In these appointments he rendered valuable service. During an epidemic of small-pox he accumulated convincing evidence of the protective influence of vaccination, and wrote an interesting paper on the treatment of small-pox by the local exclusion of light. As surgeon to the dispensary he performed several major operations on persons in humble life in their own homes in circumstances which imposed a heavy responsibility on the operator. This was before the days of district nurses, and it is a high tribute to his ability and resourcefulness that he was able to overcome the difficulties with which he had to contend. The impression which his success produced was so great both on the profession and the public that when a vacancy in the office of surgeon at the Cumberland Infirmary occurred, in the spring of 1874, he had little difficulty in satisfying the governors that he was the candidate best fitted for the appointment. Three years later he became senior surgeon, and held this office until 1903. On his retirement he was appointed consulting surgeon.

When he joined the staff of the infirmary he relinquished his other appointments, and he threw his whole energy into his new work. At this period the profession was greatly divided as to the value of Lister's discoveries. Dr. Maclaren was an ardent disciple of Lister, and introduced his technique into the infirmary.

He was always fully alive to the importance of keeping himself abreast with the latest discoveries of modern science in matters of professional knowledge and surgical technique, and he spared neither time nor trouble to obtain this end. He was an enthusiast in his professional work, and he inspired confidence not only by his manipulative skill but by his sound common sense, his quiet dignified manner, and by his firmness of character. He was most painstaking in his investigation of disease, and when he had once formed an opinion he was not easily shaken in his decision. He was held in high esteem by his professional brethren, and over a wide area in the north of England and south of Scotland his aid as a consultant was frequently invoked. In this respect his loss will be keenly felt. He always was jealous of the good name and welfare of his profession, and his advice was sound as his expression of opinion was lucid and to the point.

His services to the Association are especially deserving of recognition. He was an original member of the Cumberland and Westmorland Branch, and took an active part in its organization. He soon after advocated the expansion of the area of the Branch to the South of Scotland and the changing of its name to the Border Counties Branch. For two years he acted as Secretary of the Branch, and in 1879 he filled the office of President. For many years it was his ardent desire that the Association should hold one of its annual meetings in Carlisle, and it was largely at his instigation that in 1895 an invitation was sent to the Council to hold the annual meeting in Carlisle in 1896. He acted as Treasurer for the meeting, and to his business capacity and knowledge of affairs the success of the meeting was largely due. By universal consent he was selected to deliver the Address in Surgery, and in congratulating him on the selection of "a fresh and very suitable subject" for the address—namely, "Preventive Surgery"—the JOURNAL said: "In this as in other

respects the choice of a successor to the many distinguished surgeons who in past years have performed a like function has been fully justified." That this was not the language of mere compliment is shown by the fact that when Mr. Pye-Smith, Professor of Surgery in the University of Sheffield, delivered the Address in Surgery in 1908 he paid a graceful tribute to his predecessor in the following terms: "Prophylaxis is, it seems to me, as real and valuable in surgery as it is in medicine and obstetrics, or even in sanitary science, a thesis ably maintained from this chair twelve years ago by Dr. Roderick Maclaren, and well worthy of our renewed consideration to-day." Dr. Maclaren represented the Branch in the Central Council for four years—namely, 1899 to 1903—and when the change of constitution was effected he was unanimously appointed the first Chairman of the English Division of the Border Counties Branch. To the Division he contributed a series of three addresses on a subject of much practical importance. These were subsequently published in the Journal, and were entitled, "The Relations of Medical Men to (1) their Brethren, (2) their Patients, and (3) the State." Including the papers already enumerated, he contributed more than forty papers to the meetings of the Branch, many of which were published in the Journal. He also contributed several articles to the Manchester and Liverpool *Hospital Reports*, and at least one paper to the Edinburgh Medico-Chirurgical Society.

The value of his services to the Cumberland Infirmary were not limited to his purely professional duties. From the first he took an active part in the administrative work of the hospital, and his practical mind, progressive ideas, and business knowledge were of the utmost value. Many important improvements were carried out largely on his initiative.

He was for many years consulting surgeon to the Border Counties Home for Incurables, and medical referee under the Workmen's Compensation Act, frequently sitting as assessor with the County Court Judge.

Apart from professional work he was a man of many activities. He had strong artistic and literary tastes, was a good amateur photographer, an original member of the Carlisle Literary and Scientific Society as well as of the Carlisle Microscopical Society, and for forty years a member of the local Antiquarian Society. He had a good knowledge of wood-carving and carpentry, and was a skilled taxidermist. His knowledge of mechanics he turned to practical account by the invention of several appliances which he found useful in practice.

During his summer holidays he went for many years annually to Switzerland and indulged in Alpine climbing. His observations on glacial erosion formed the subject of an interesting popular lecture. He was fond of travel, and in later life he visited in his holidays Austria, Italy, Spain, Turkey, Greece, and some portions of North Africa.

In 1875 Dr. Maclaren married a daughter of the Rev. D. Campbell, minister of North Knapdale, Argyllshire, and she with her three sons, the eldest of whom is Mr. Norman Maclaren, F.R.C.S., surgeon to the Cumberland Infirmary, survive him.

The large attendance at the funeral on June 20th testified to the universal respect in which Dr. Maclaren was held by all classes of the community. In addition to representatives of the Cumberland Infirmary, there was a large gathering of leading citizens and about forty members of the medical profession from all parts of Cumberland.

Dr. Crerar, retiring President of the Border Counties Branch, at the meeting held in Carlisle on June 27th, made the following remarks:

It seems fitting that at this stage of our proceedings I should rise to propose a resolution recording our high appreciation of the work and personality of the late Dr. Roderick Maclaren. We are met to-day under the shadow of a loss which I am safe in saying is personal to every one here. Dr. Maclaren had been associated for many years with the British Medical Association in the Border Counties. He was an original member of the old Cumberland and Westmorland Branch, and took a large part in all its activities. He filled all the offices possible in our Branch. His membership and active interest have terminated only at his death. It cannot but be that to many of us his removal leaves a sense of loss which time may soften but cannot eradicate. He had been Secretary and President of the Branch. He was the first Chairman of the English—the Cumberland—Division of the Association. He acted on all our committees. He represented us on the Central Council of the Association. We looked upon him as one of our Nestors. To him and to his old friend (and our old friend) Dr. Barnes were entrusted the responsibilities associated with the Ethical Committee. The work of that Committee at no time has been onerous, but the unanimity with which he was elected is a testimony to the regard in which we held him. The position he attained in our profession was appropriately recognized by his being invited to deliver the Address in Surgery when the annual meeting was held in Carlisle in 1896. To him the community, the profession, and the British Medical Association owe much gratitude for services ably and generously rendered. We deplore the loss of a trusted comrade and leader, of a capable and resourceful surgeon, of a helpful and discriminating consultant, of a man who was at once a type and an epitome of all that is best in an honourable and beneficent profession. Dr. Crerar concluded by moving the following resolution, which was unanimously adopted:

> That this meeting desires to place on record its high appreciation of the memorable services rendered to the Border Counties Branch by the late Dr. Maclaren during the last forty-five years; its sincere regret at his death, and its deep sympathy with Mrs. Maclaren and her family in their bereavement; and that the President of the Branch be requested to convey to Mrs. Maclaren this expression of opinion.

Sir Thomas Clouston writes:

I knew Dr. Maclaren intimately for over fifty years—from the time he began to study anatomy under me till his death. He was a hard worker all his life—strenuous, modest, conscientious, sympathetic to his patients, loyal to his friends, and entirely devoted to his profession. In his youth he was one of the best makers of anatomical and pathological dry preparations I have ever known. He often expressed regret that his large practice left him so little time to record his surgical experiences. He was intensely interested in medical ethics, and wrote an admirable essay on the subject. I never heard him speak uncharitably of one of his professional brethren. His personality was a charming one. A shy but friendly and unassuming manner, a soft voice, with a humorous twinkle in his bright eye, were very distinctive. They covered a will of unusual force, and in no way lessened the confidence of his patients. He looked fragile, ate little, and made a brave fight against a certain constitutional delicacy, which did not, however, prevent his being a good walker and mountain climber. He gave the impression of working up to the limits of his strength, but he was seldom off duty except on his annual holiday in Switzerland, which he found set him up in a wonderful way.

Sir John Collie sends us the following tribute to Dr. Maclaren's memory:

Dr. Maclaren possessed the rare combination of a gentle, almost shy and retiring disposition, with a strong personality. His keen, shrewd knowledge of the world, coupled with a profound acquaintance with the principles and practice of surgery and a wonderful manipulative dexterity, soon led to the large consulting practice he enjoyed. It is now nearly thirty years since I acted as his assistant at Carlisle, and I have never ceased to be thankful for the opportunities which that relationship gave. No one who knew Maclaren could fail to love and respect him, and most of his assistants developed into lifelong friends. There are many men now practising medicine who remember a kind and generous friend, whose standard of living has influenced their whole life. Intuitively he always seemed to know what ought to be done, and he did it regardless of the consequences. He was a man of action; he thought deeply, reasoned clearly, and always acted with decision and firmness. Expediency had no place in his vocabulary. Young men who are entering on medical practice have many lessons to learn during their first assistancy, and yet under Maclaren how gently but emphatically were these lessons taught. One example will suffice, and although it occurred nearly thirty years ago, it left an indelible impression on my mind. A young

married woman who had secondary syphilis was acutely ill, and it was apparent that she might die at any moment; she was nine months pregnant, and it might therefore be my duty, in my chief's absence, to attend her if she were *in extremis*. I must have said something which showed that I was prepared to neglect what Maclaren thought would be my obvious duty, for I well remember his genuine astonishment that I should for one moment hesitate in the event of her death in performing the necessary Caesarean section. The fact that his young assistant might have difficulty in selecting the psychological moment for operation, or have difficulty in performing it, did not seem to enter into his calculations. The unborn child had to be saved, and that was all Maclaren thought about.

Many have lost a true friend; all will feel that his life was an ennobling inspiration; he has left an enduring example, and those who knew him best and loved him, feel how true it is that "to live in the hearts of those we leave behind is not to die."

Mr. J. W. SMITH (Surgeon to the Manchester Royal Infirmary) writes: Twenty-five years ago I was for a year Dr. Maclaren's assistant. During that year's work together I found what a very sound surgeon he was, and subsequent experience has only served to accentuate that belief. He essentially possessed the "surgical instinct," as he himself defined it in his Address in Surgery at the Annual Meeting of the British Medical Association at Carlisle in 1896—"truly nothing but the capacity for taking a rapid and exhaustive mental survey of the patient and his surroundings, summing him up inside and out, and judging of his capacity for standing shock and for repair." This instinct, guided by his clear, logical mind, gave him a fine diagnostic power. His verdict in a case, showing his grasp of true surgical perspective, was apparently quick, and from his quiet and undemonstrative method seemed a simple and easy matter. But once arrived at it was adhered to steadily, though seemingly with some diffidence, and it was only arguments against it that brought to light its foundation on a clear and reasoned basis. Dr. Maclaren strove always to keep an open mind and rise to new surgical truths, as is well shown by his survey in the address of 1896 dealing with preventive surgery. But his success depended not only on his skill in diagnosis and knowledge of surgical principles, an equally important factor was his operative technique. His movements, deft and quick yet steady and certain, made operations look easy. There was no attempt to impress onlookers, but his appreciation of true surgical perspective was shown by the exactitude devoted to important details, and the absence of what has been termed "the upholstery of the operating table." Young graduates who had the opportunity of assisting him learnt much, and I think he would gain from all, as he did from me, admiration as a fine surgeon, esteem as a man—*Integer vitae scelerisque purus*—and affection as a friend.

ALFRED WILLETT, F.R.C.S.,

CONSULTING SURGEON, ST. BARTHOLOMEW'S HOSPITAL.

WE regret to record the death, on June 30th, of Mr. Alfred Willett, a surgeon who, until some ten years ago, played an important, though very quiet, part in the professional life of London. During his active career he had a house in Wimpole Street, but of late years he had spent his time between his house in Oxford Square, Hyde Park, and his country residence, Wyndham Croft, Turner's Hill, Sussex. It was at the latter place that his death took place in the 77th year of his age.

Mr. Willett was born at Brighton in 1837, his father being the late Mr. W. Willett, of Portland House, Brighton, and his mother a daughter of the late Mr. William Verrall, of Lewes. He received his professional education at St. Bartholomew's Hospital, and with the fortunes of that institution and of the Royal College of Surgeons of England he was closely associated during the whole of his career. Among the more important offices that he filled at the former were those of warden of the College and demonstrator of practical surgery at the medical school, while later he lectured at different periods both on systematic and clinical surgery. The hospital itself he served successively as assistant surgeon and full surgeon, and finally retired under the age clause and was appointed consulting surgeon.

Of the Royal College of Surgeons he became a Member in 1859, and, except as examiner, he was never connected with any other degree-granting body. He was admitted to the Fellowship of the College in 1862, and during the last twenty years of his career he took a more or less continuously active part in the administration of its affairs. He was first elected a member of its Council in 1887, and was again chosen a member at the election in 1895. For a year previous to the latter date he had filled the office of vice-president, and he again filled it in 1897, in which year he delivered the Bradshaw Lecture. Other institutions with which he was connected were Queen Charlotte's Hospital, St. Luke's Hospital for Lunatics, the Foundling Hospital, and the Evelina Hospital for Children. He was a member of the board of management of the Metropolitan Convalescent Institution, and one of the Court of Directors of the Royal Sea-Bathing Hospital at Margate. Further work done by him was as examiner in surgery to the University of Cambridge and the Royal College of Physicians of London. King Edward's Hospital Fund for London was another body indebted to him for much excellent work. He was a member both of its general council and also of its distribution committee, and in connexion with the latter he acted as a hospital visitor. He was a member of the British Medical Association, and was Vice-President of the Section of Surgery at the annual meeting in London in 1895.

Like many other surgeons of vast clinical experience, Mr. Willett exhibited a great restraint in the matter of putting opinions he had formed into a permanent written form. He was, however, a constant attendant at meetings of the Royal Medical and Chirurgical Society, of which he was at one time president, and one or two papers by him dealing with osseous malformations are to be found in the *Transactions* of that society. As a surgeon he was conspicuous rather for the care that he took in diagnosis, in the performance of operations, and in the matter of after-care than for brilliancy of technique. His general tendencies as a surgeon were conservative, but he always kept himself very much up to date, and was by no means averse from giving careful trial to new methods. In regard to the treatment of deformities by operative procedures—a subject to which he devoted his Bradshaw Lecture—he was in some degree a pioneer.

Of quiet and somewhat reserved manners, Mr. Willett was not one of those surgeons who attract a large following of students whenever they visit their wards, but those who served him as dressers or as house-surgeons well knew how much there was to be learnt from him, and that good work always obtained due recognition at his hands.

He married in 1867 the only daughter of the late Sir George Burrows, F.R.S., and has left a large family, which includes two daughters as well as several sons. A memorial service was appointed to be held at the church of St. Bartholomew the Less—the church of the parish constituted by St. Bartholomew's Hospital—on Friday, July 4th.

WILLIAM GROUNDS BOOTH, L.R.C.P.I., L.M.,

REPRESENTATIVE IN REPRESENTATIVE MEETINGS OF THE MANCHESTER (CENTRAL) DIVISION.

IT is with great regret that we record the death, on June 25th, of Dr. William Grounds Booth, the Representative of the Manchester (Central) Division. Dr. Booth had suffered from diabetes for many years, and his death was not unexpected. For the last two years it had been necessary for the Manchester (Central) Division to appoint a Deputy Representative to attend the meetings of the Representative Body, as Dr. Booth's health had not been fit to stand the strain of prolonged meetings.

Dr. Booth was the son of a chemist in Ancoats, Manchester, where he was born 63 years ago. Young Booth qualified as a pharmaceutical chemist, and some little time after the father died, leaving the business to the son. At this stage Booth decided to take up medicine, and for some years studied at Owens College, keeping up his business the while. In 1887 he obtained the licences of the Irish Colleges, and henceforth practised as a physician and surgeon at his old home, giving up his chemist's business. He at once joined the Association, and soon acquired

a reputation among his brethren for straightness and fearlessness of action. When the Manchester (Central) Division was formed some twelve years ago he was appointed its first Representative in Representative Meetings, a post he held with great distinction to himself and satisfaction to his brother members till his death. It is remarkable that year after year a Division which consists largely of consultants should have renewed their confidence in a general practitioner as their Representative. When his health failed two or three years ago no one would hear of his place being filled up by another, and Dr. T. Arthur Helme was appointed to act as deputy. Dr. Booth was for a year Chairman of the Division about eight years ago, and was also Chairman of the North Manchester Medical Union, as well as a member of the Manchester Clinical, Medical, and Pathological Societies, and at one time co-secretary of the Medico-Ethical Society. Dr. Booth never married.

He was much interested in the work of the Royal Society for the Prevention of Cruelty to Animals, and for over twenty years was a member of the Committee of the Manchester branch of that body. When he saw a burly carter attacking his horses, he would think nothing, though himself of slight and rather frail build, of going up to him and forcibly remonstrating with him. He was a lifelong teetotaler and an active supporter of the Church of England Temperance Society. In religious matters he showed an earnest desire to bring together once more the Church and Nonconformity, and was known as a very sincere Low Churchman.

His body was cremated at the Manchester Crematorium on June 28th; at the service at the crematorium, as well as at that preceding it at St. Peter's, Blossom Street, Ancoats, where he regularly attended, those who were present to pay their last token of respect to a very modest, upright, high-principled brother included Drs. McGlade and Alex. Fraser, representing the North Manchester Medical Union; Dr. Murray, Dr. Cunliffe, Mr. Howson Ray, and Dr. Henshaw (his partner for many years), representing the Manchester (Central) Division; Drs. Tytler, Simcock, Brown (Bacup), Williams, Smith, and many others.

We are requested to state that Dr. T. Arthur Helme, the chairman, and Dr. Tylecote, the honorary secretary, of the Manchester (Central) Division, were, to their great regret, prevented from attending the funeral.

EDWARD PRICHARD EVANS, M.R.C.S., L.R.C.P.,

M.O.H. MOUNTAIN ASH.

DR. EDWARD PRICHARD EVANS, of Mountain Ash, died at his residence in that town on June 4th, at the close of an illness which, beginning in 1911, had confined him to the house for the last three or four months. A man of many friends and justly popular wherever he went, his loss is the source of keen regret among all classes of society. He was born in Ystrad Mynach in 1854, and on leaving Cowbridge Grammar School commenced his medical education by apprenticeship to Dr. Leigh, of Llanfabon. He afterwards entered the medical school of the Middlesex Hospital, and took the diplomas of M.R.C.S.Eng., L.S.A.Lond., and L.R.C.P.Edin. in 1878. He became assistant to a medical man in Mountain Ash, and subsequently acquired and greatly extended the practice of his former principal. At the time of his death he was medical officer of health to the district, a medical officer and public vaccinator to the Pontypridd Union, surgeon to several collieries and to the Great Western Railway, and was on the Commission of the Peace for the county of Glamorgan.

A genial, truly kind-hearted man, a believer in his fellows and a lover of nature, and ever loyal to his friends, Dr. Evans, during his thirty-five years' residence in Mountain Ash, had endeared himself to a host of people. It was quite a small village when he first took up his residence there, and he took great pleasure in bearing tribute to the memory of those who had helped to build it up into what it now is—an important industrial centre. He never forgot the man from whom he acquired his first knowledge of medicine and surgery, and used to express his regret at the absence of apprenticeship in the medical curriculum of the present day. For his old hospital—the Middlesex—and those connected with it, his feeling was one almost of reverence; he seldom missed the inaugural and annual gatherings at the commencement of the winter session, and his presence at these will be greatly missed. The same remark applies to the gatherings of the British Medical Association, of which he was a very loyal member.

In private life Dr. Evans took much interest in Welsh literature, and especially Welsh poetry; few could read an englyn more correctly and impressively. Many of the verses which he used to repeat were composed by his own father—a Welsh bard of considerable repute—while others were derived from a collection of ancient Cymric poetry which the latter had brought together. Dr. Evans, whose funeral on June 7th was attended by a large concourse, is survived by five children—two daughters and three sons.

DR. JULES THIRIAR, professor of surgery in the University of Brussels, died suddenly while in the act of auscultating a patient. He had suffered for some time from myocarditis. He was the leading surgeon in Belgium, and had a great reputation as an operator. He was surgeon to the Hôpital Saint-Pierre for more than a quarter of a century. Professor Thiriar was born at St. Veaast (Hainault) in 1846, and was therefore 67 years old. He was medical adviser to King Leopold II for twenty years.

SURGEON-LIEUTENANT-COLONEL HORACE PARR YELD, late of the Bengal Medical Service, died at Harrogate on June 21st. He was born on September 11th, 1847, educated at Glasgow University, took the diplomas of L.R.C.S. and L.R.C.P. at Edinburgh in 1870, and entered the I.M.S. as surgeon on March 31st, 1874. He became surgeon-major on March 31st, 1886, surgeon-lieutenant-colonel on March 31st, 1894, and retired on November 15th, 1894. His first ten years' service were spent in military employment, during which he served in the Afghan war in 1879, with the Thal Chotiali and Vitakri Field Force, receiving the medal. In 1884 he joined the Assay Department, and held the post of deputy assay master of the Calcutta and Bombay Mints successively during the next ten years.

BRIGADE-SURGEON EDWARD SEXTON, of the Bombay Medical Service, retired list, died at Southsea on June 25th. He took the diploma of L.R.C.S. at Edinburgh and the degree of M.D. at St. Andrews in 1856, and in the same year entered the Medical Department of the Royal Navy. In 1857 he took part in the disarming of mutineers at Kidderpur, in Bengal, a small incident of the Mutiny. In 1858 he resigned his commission in the navy, and on February 10th, 1859, entered the I.M.S. as assistant surgeon, becoming surgeon on February 10th, 1871; surgeon-major on July 1st, 1873; and brigade-surgeon on September 15th, 1886. He retired on October 1st, 1889. His whole thirty years' service was spent in military employ—except for a short period in 1869–70, in the Calcutta Mint—the first few years in the Indian navy, afterwards in several different regiments of the Bombay army, including a spell of five years as staff surgeon at Poona. Besides the service in the Indian Mutiny mentioned above, he served in the second China war of 1860, taking part in the suppression of the Taeping rebellion and in the protection of the European settlements at Shanghai, and received the medal and clasp. He served also in the Abyssinian war of 1867–68, when he was in medical charge of the Third Dépôt Hospital, and received another medal.

PROFESSOR BOUCHARD, President of the French Association for the Study of Cancer, has placed at the disposal of that association a sum of £200 to be allotted as prizes to the author of the best work treating of the pathogeny of cancer. In accordance with the wish of the donor, the prize will be awarded for the first time at the end of 1915.

AT the annual competitions in connexion with St. John Ambulance Brigade in Dublin, held on June 21st at Lord Iveagh's gardens, the Dublin Ambulance Challenge Cup was won by St. James's Gate No. 2 team, with a record of 201 marks out of a possible 250. The Belfast Fire Brigade was second, with 199½; and Messrs. Jacobs No. 2 were third, with 187. The Irish Women's Ambulance Challenge Cup, which was offered for the first time, was won by the Naas Nursing Division with 161 marks.

Medical News.

PROFESSOR VON DUNGERN of Heidelberg has been appointed Director of the Institute for Experimental Cancer Research recently established at Hamburg-Eppendorf.

THE next meeting of the Society for the Study of Inebriety will be held in the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, W., on Tuesday, July 8th, at 4 p.m., when Captain Arthur J. St. John, Honorary Secretary of the Penal Reform League, will open a discussion on "Inebriety and Crime."

THE summer luncheon of the Irish Medical Schools' and Graduates' Association will be held at the Hotel Metropole, Brighton, on Wednesday, July 23rd, at 1.30 for 1.45 p.m., the President, Dr. W. Douglas, in the chair. The general meeting of the members of the association will be held after the luncheon. Tickets (3s. each) may be obtained from Dr. Shepherd Boyd, Provincial Secretary, 7, Springfield Avenue, Harrogate, or during the meeting at the Hotel Metropole.

THE report for the year 1912 with regard to the Nightingale School for Nurses at St. Thomas's Hospital as usual affords testimony to the success of this institution and the value of the education which it affords. The preliminary training at the school is stated to be proving its value in weeding out unpromising pupils, the number of whom has steadily decreased in each of the last three years.

THE annual meeting and launch party of the Brussels Medical Graduates' Association will be held on Friday, July 11th, when the saloon launch *Empress of India* will leave Maidenhead Bridge for Henley at 12.15. The train starts from Paddington at 11.15 for Taplow, which is the nearest station for Maidenhead Bridge. Tickets, 12s. 6d., including launch, luncheon, and tea, may be obtained from the Honorary Secretary, Dr. Arthur Haydon, 23, Henrietta Street, Cavendish Square, W.

IN the advertisement columns this week will be found a notice from the Manchester Medical Mission, which is seeking some one to take over the work hitherto done by Dr. R. M. Fenn, who, after occupying the post of medical officer to the mission for some seventeen years, is about to go to South America in a similar capacity. From the annual report of this mission, which has been some forty years at work, it appears that the attendances last year numbered between 8,000 and 9,000. In addition to a medical officer and a surgeon, a missioner is attached to the institution. From what is stated in the report, the needs which it has hitherto fulfilled have been in no wise lessened by the National Insurance Act.

DR. DEBOVE has been elected Perpetual Secretary of the Académie de Médecine by 87 votes out of 90. He was sometime Dean of the Paris Faculty of Medicine and is now President of the French Anti-alcohol League. He is a man of great activity, and it is confidently expected that his initiative will stir up the Académie to make its influence felt by the Government and other public authorities. It is interesting to note that in the course of nearly a century there have been only six perpetual secretaries of the Académie: Pariset (1822–1827), Adelon as an interim official (1828–1830), Pariset again (1831–1847), Dubois (1847–1873), J. Béclard (1873–1887), Bergeron (1887–1900), Jaccoud (1901–1913). The average length of tenure of the office is a fraction over fifteen years.

AT the summer dinner of the West African Medical Staff, on June 16th, Dr. Prout was in the chair, and the guests included Sir H. Just, Under-Secretary of State for the Colonies, and Sir Ronald Ross. In the course of the evening Dr. Prout mentioned that the dinner was the thirteenth, and that its institution had been a success, since it had been the means of bringing together men who had few opportunities of meeting and had helped to promote a desirable feeling of *esprit de corps*. The West African Medical Staff was able to do distinguished work in connexion with the building up of the empire, and was a service whose members had reason to be proud of their position. In replying to the toast of "The Guests," Sir H. Just said that at the time when he was directly connected with the West African Medical Department of the Colonial Office there were comparatively few coast medical officers; they now formed a large and responsible body, the excellence of whose work was shown by the diminishing invaliding and death rates among West Coast officials. It had the entire sympathy of the Colonial Office, and could rely upon a fair and sympathetic hearing of any representations made with a view to increasing its efficiency. A similar note was struck by Sir Ronald Ross, who expressed a belief that the West African Medical Staff was destined to rank with the other great services of the empire. In proposing the toast of "The Chairman," Dr. Cameron Blair voiced the general regret that Dr. Prout was unable, through pressure of other work, to continue to act as president of the dinner club. Its inception and maintenance were due to him entirely, and officers of the service owed him much gratitude for what he had done. Dr. Prout having suitably acknowledged the toast, the formal proceedings then ended.

THE members of the profession in the district have resolved to make a suitable presentation to the late Chairman of the St. Pancras and Islington Division, Dr. R. M. Beaton, in recognition of the exceptional services rendered by him to the Division and to the medical profession at large. Dr. Beaton was formerly a member of the London County Council and chairman of its Public Health Committee, and is now a member of the Metropolitan Water Board. He thus brought a long and varied experience of public work as well as general practice to the business of the British Medical Association; for it he has done yeoman service as a member of the Council and of the Representative Body, and the confidence felt in his judgement was shown by his selection by the latter body as one of the five members to take part in the interview in which the wishes of the Association were finally placed before the Chancellor of the Exchequer in November, 1912. Members of the profession in St. Pancras and Islington believe that many members of the profession outside their boundaries will desire to contribute to the presentation, and subscriptions, which should not exceed 10s. 6d., may be sent to Dr. A. Brown, 1, Bartholomew Road, Kentish Town, N.W.

THE foundation of the Home Science and Economics Department of King's College for Women marks an epoch in the history of the higher education for women in this country. Hitherto educationalists have concerned themselves with the development of the intellectual side of women's nature alone; and the art of home-making and all that appertains to the rearing of children seem to have been regarded as a talent latent in every woman, which only required the magic words of the marriage service to bring it forth from the bushel beneath which its light had been hidden. The result has been the deaths of tens of thousands among the newly born, and loss of health and consequent disablement of many more who managed to survive the experimental methods of anxious but incompetent mothers. The evil, moreover, is by no means confined to the uneducated, but has been felt in every stratum of society, and the foundation of the new department at King's College should be welcomed by all who have the true interests of their country at heart. This addition of a domestic course to the London University curriculum for women and the establishment of a diploma in household and social science is the first attempt made by a university to train its women students to fulfil their natural destiny. It is true that a course of scientific instruction in hygiene for women comparable with the course given to men for the Diploma of Public Health was instituted some time ago at Bedford College, but with the object of training women for such public offices as those held by health visitors and sanitary inspectors, whereas the course at King's College aims rather at fitting them for the duty of wife and mother. The King's College students will receive scientific instruction in all matters connected with the organization of households, the care of young children, and the general health of the home; and there is every reason to believe that this scheme, which owes much of its success to the active interest taken in it by the Queen, will do much to mitigate the enormous annual waste in child life which at present forms such a blot on the fair face of our civilization. The new department will be housed in the "Queen Mary's Hostel," for which an excellent site has been found on Campden Hill. In spite of its independent existence, it will be in organic relation with the London University. The hostel will include the new buildings of King's College for Women as well as the necessary laboratories and lecture rooms for the home science students. Funds are urgently needed for its completion, and an appeal has recently been made to which it is to be hoped the public will respond with generosity. The movement is one of national importance, for the maintenance of our position at home and abroad depends largely upon physical efficiency, and the health of future generations lies in the hands of the potential mothers of the race. This attempt to fit women for marriage and motherhood as for a career cannot be too highly commended, and should receive the cordial support of all those who see in the rate of infant mortality, which, though lower than it was, is still much too high, and in the decline of the birth-rate the early evidences of national degeneration and decay.

Letters, Notes, and Answers.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

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CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR. BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

G. E. A. M. would like to hear views as to the etiology and possible treatment of the following case: The patient, a baby, weighed only about 5 lb., though said to be a full term child. It took the breast, but died when about 40 hours old. When first seen it was aged 36 hours, and was said to have been vomiting for some hours. As in the presence of G. E. A. M. it brought up about half a pint of black fluid, the total amount vomited must have been considerable. The fluid resembled meconium, but was not so green. The pulse was only 60; the bowels had not been moved, and the little finger could only be passed into the rectum for about half an inch. Subsequent to this some yellow-coloured faeces escaped. The treatment consisted in maintaining the temperature with hot bottles. No necropsy was obtainable.

LETTERS, NOTES, ETC.

Scarcity of Ship Surgeons.

MEDICO MARITIMO writes: The time seems opportune for ship surgeons to combine to get better conditions of service, for it is obvious from letters and advertisements that the demand exceeds the supply. Personally, I have had but limited experience, but I recently took a voyage on one of the great liners, and on my return, before I landed, I was asked to repeat the dose the following week, apparently without any inquiry. The hospital steward, who had been on the ship some years, told me he had never been twice with the same surgeon. I am not going to reiterate grievances. The ship surgeon has but little consideration from the officers, and little respect from the crew; a sort of tail that is not allowed to wag. But it was humiliating to find that the supercargo, who is a retired policeman, was receiving higher pay and provided with uniform. All this can be traced back to head quarters, because if the conditions of service were better, a better class of men would take up sea life. Now is the time, if there are any regular ship surgeons in the vertebrate division, to combine and make their terms. I think the basis of their demands should not be an increase of salary on passenger boats, but that all passengers, according to class, should pay a fixed tariff of fees, and not, as now, have "Gratuitous medical attendance" stuck up in every cabin. This is already done on some of the leading lines, such as the P. and O. and the German Hamburg-Amerika lines, with equal benefit to all on board, and it removes the galling grievance of ship doctors. The principle is admitted by our Government, which pays for emigrants and naval or military invalids. I have heard there is a Ship Surgeons' Association, and it would be well if the directors of shipping combines also became aware of its existence, for they are mortally afraid of the Seamen's Union.

DR. J. H. OGILVIE (Birtley, co. Durham), in a letter on the same subject, writes: It may astonish many to learn that the surgeon on board is not an officer at all, and cannot exercise any authority whatsoever, for he signs the ship's articles simply as a sailor man. If his ship pick up another in distress, his share of the salvage is paid at the rate of ordinary seaman's pay. If his vessel be wrecked, he can only insist on being sent home as a seaman, third class. He is allowed a room to himself, but it is almost always inferior to the rooms of the superior deck and engineer officers, the purser, and even the steward; it is often placed in an odd corner, and in many ships yet it is also the consulting-room and dispensary of the ship. Until recently the pay in most lines was £6 a month while the ship was absent from Great Britain. On arrival at a home port the pay ceases till the ship sails again. The scarcity of doctors has forced up the pay, but it is still insufficient. Consider the responsibility that rests on the shoulders of a doctor at sea. He must treat every disease intelligently, and must be prepared to operate for appendicitis or a ruptured duodenal ulcer, and to use midwifery forceps, even in a gale of wind, and that I know from experience is no joke.

A better time than this could not be for insisting on improvement. Doctors are very scarce, and will yet become scarcer. An Act of Parliament should be obtained to make the doctor an officer and to give him rank equal to the commanding officer, but subject to him. This will secure for him the complete control of his own department and enable him to compel such orders as he may give for the welfare of the vessel being carried out. The pay should be £20 a month for the senior or only medical officer, and £15 for the junior. The senior or only medical officer should be entitled to charge fees from passengers at a recognized scale—namely, 10s. 6d. for first class, 5s. for second class passengers; the third class may go free. (I remember in Cook's steamers on the Nile it was, and may be still, offensively and prominently stated in each state-room that the doctor is not at liberty to charge fees.) Such a system would enable the surgeon to make a suitable income and save him the discredit of taking tips like a steward.

The British Medical Association should approach the big shipping companies and ask them to join the Association in getting a suitable Act passed. If they refuse tell them the JOURNAL and the *Lancet* will strive to prevent doctors from going to sea, and that they will get the medical schools to join. Many years ago this kind of thing compelled Government to greatly improve the position of medical officers in the army and navy.

*** The matter is engaging the attention of the British Medical Association, and a Ship Surgeons' Subcommittee of the Medico-Political Committee has been constituted, but, owing to the great pressure of work due to matters affecting the Insurance Act, it has not met recently. The matter is referred to in the Supplementary Report of the Council published in the SUPPLEMENT for this week, p. 4.

The Declining Birth-Rate.

DR. CHARLES STANDRING (Broadway, Worcestershire) writes: I was glad to see Dr. Dunlop's sensible letter. I recently attended a woman in a neighbouring village with her fourteenth baby. During her convalescence I ventured to suggest a slight limitation of this extravagance, knowing that eight of her children are on the "parish," and four are "degenerates." She said, "Oh, sir, the Lord will provide!" Surely this is the general opinion of crass improvidence, and should be prevented.

Purification of Water Supplies.

UNDER the title of *The Purification of Water Supplies* has recently been published by the Paterson Engineering Company a well illustrated pamphlet dealing with the subject indicated in general and at the same time supplying information as to the purification systems introduced by this firm. It is so often laymen that have the chief voice in deciding what plans shall be adopted in dealing with a water supply that possibly the firm has been well advised in its choice of a method of drawing attention to its own system. But those already conversant with the general subject would probably have been better pleased had a more compact account of the three systems used by this firm been placed in their hands. These aim respectively at filtration, softening, and sterilization. The first-named is a rapid filtration system, which, though applied mechanically in varying fashions according to circumstances, depends in all cases on the admixture of measured quantities of water with measured quantities of a solution of aluminium sulphate. The principal claims made in respect of it are to the effect that the initial cost of the system is very much less than that of building ordinary slow filtration beds, while the area required is relatively very small; that contamination of the water during filtration is prevented owing to the fact that the beds are covered in; that the filtration is through an inorganic instead of an organic film, and cleansing of the bed can be rapidly performed; and that the water is not only rendered almost entirely bacteria free, but has all colouring matter and plumbo-solvent action eliminated at the same time. It may be added that the points in favour of this method and of its rivals are set forth in moderate terms and that the booklet as a whole will repay perusal. The London address of the firm is 12, Norfolk Street, W.C.

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